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THE MEANING OF ACCOUNTING EDUCATION

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WHEN WE think of preparation for a professional career in accountancy, two elements come to mind which are written into most CPA laws, namely, experience and education. Usually "experience" is thought of narrowly as practical accounting work, and "education" as consisting of general rather than technical studies.

Are these prerequisits two different ways of leaning, that is, by practice and by study? Do they suggest that accounting should be learned by practice in an office and other matters learned by study in school? Can the two prerequisits be combined in order to supplement each other? Can undirected study supplement accounting office work in a satisfactory manner, and can simulated practice be a satisfactory supplement to teacher-directed study in school? Are alternative approaches to the profession implied in the two prerequisits? Are experience and education merely variations of one approach because all education is a complex made up of different experiences and all experience is educational in effect?

At the center of any kind of education there is always the idea of a learner learning. Learning is an activity directed at gaining experience. Experience may be gained in two ways, personally and vicariously. Personal experience may be obtained by simple trial and error. Often personal experience is obtained from observation. The observer learns to duplicate what another does in his presence. To gain experience vicariously however is to act on a different level. Here learning makes use of generalized experiences. These are broken down into simulated experience and codified experience. In the first class are problems and experiments which offer concise substitutes for larger real actions but which are nonetheless typical of actual life. Codified experience is the compressed results of many isolated trials. This treatment of experience produces generalizations, principles, theories, explanations.

Along with the learner learning there is usually a teacher teaching. Teaching is an activity directed at facilitating learning; it may be informal or formal. The most informal and unconscious teaching is that which is purely cooperative. Two bear cubs busily cuffing and clawing at each other are teaching useful arts to bears. The junior assistant is learning informally when he is cooperating with the senior in calling over vouchers, and when the older man shows the younger how to prepare a schedule that is needed at the moment.

Formal teaching is in some respects on a higher plane. Here a planned grading of problems and experiments is designed to assist the learner to make rapid progress along predetermined lines. Also included in formal teaching is a careful selection of generalizations and principles which will help the learner to understand his hypo-

thetical exercises and to see their interrelation.

It is the function of the teacher therefore, first, to act as a guide through a maze familiar to him but obscure to the learner, and second, to act as a planner to select and arrange accumulated experience so that the learning process will be speeded, broadened and deepened. Teaching also has a responsibility for improving motivation when necessary. Natural ability to work now for a dimly perceived future seems to vary greatly among individual learners. Hence part of the service the teacher should perform is to supplement self-motivation. He is also called upon to supplement as best he can the varying capacity of his students to absorb teaching materials.

But learning and not teaching is the focus of education. The important thing is that the learner shall absorb experience. Teaching cannot inject knowledge; it can only facilitate absorption and direct the acquiring of skills. Obviously learning and teaching may be combined in varying proportions. Personal experience and informal teaching are usually related. Much education is of the type wherein a minimum of systematically organized material and outside help is combined with a maximum of self-motivated natural capacity to learn. On the other hand, vicarious learning and formal teaching usually go together. They do not offer a substitute for personal experience but provide a quicker journey over a larger territory.

Fundamentally education is experience. Getting an education is getting experience. Providing an education is a matter of selecting experiences out of a vast store and adopting them to the available time and capacity of the learner. A good education will be one in which teaching and learning have worked together so effectively that, regardless of the proportion of one to the other, the individual concerned will not only be able to act but also to understand; not only to understand but also to act. If the "whys" are neglected, the learning process will produce only a limited ability to deal with new situations even though teaching has been concrete and objective. If the "hows" are neglected, the experience obtained will be so abstract as to be of small real usefulness.

Education for a career in accountancy, then, as in all education, has the objective of preparing individuals to act in certain ways with understanding. It, too, is a union of teaching and learning, combined in differing proportions. No single combination is the best under all circumstances. Almost any avenue of accounting education is capable of yielding good results under suitable conditions.

A complete education will take more time than an incomplete education. An incomplete education can be accomplished with a minimum of formal teaching; a more complete preparation usually leans heavily upon the vicarious processes of learning. The amount of organized teaching and outside motivation that is necessary also varies according to the degree of completeness planned for the educational preparation. Some people must get what they can in a limited time at low cost, whereas others can extend the time with less regard for total cost. No one would expect the two types of preparation to be equally productive. The capabilities of men of large latent capacities can be developed with less teaching in less time than is necessary for men with lower native ability. Such reasons as these help to explain the existence of variety in educational programs for accountancy.

But variety in programs does not depend alone on the time factor or the capability factor. Programs may differ because the intention is to place differing degress of emphasis upon accountancy in the midst of other subjects. This purpose may of

course be influenced in part by the considerations just mentioned. But emphasis may be varied because different men with ample capacity and plenty of time may have need for differing amounts of accounting to complete their educational intentions.

Some, because of their intentions, may need only an appreciation of accountancy as one of a number of social institutions. Accounting is used in the social interest as an instrument of regulation of business; uniform systems of accounts and reports have been required in some cases; audits may have been prescribed; professional accountants are examined and licensed; accounting provisions are increasing in corporation laws. Such an appreciation approach would seem to be a very appropriate one in many educational situations. Yet this approach is seldom found among the college offerings. Perhaps this development awaits the appearance of authors who will rise above technique to write about accountancy in its social significance.

Some people may desire to plan an educational program from which among other things they wish to gain an understanding of accounting as an instrument of executive use. Here the central theme of the educational plan would be business administration; accounting like other subjects would be studied not for itself but as an adjunct to organization and administration. Beyond the study of basic accounting processes which is necessary in order to understand the language and intentions of accounting, emphasis here would no doubt be placed upon the meaning to be found in accounting reports, and the interrelation between the facts there portrayed and the facts of surrounding economic conditions as reflected in statistical reports. Instead of stressing techniques a good deal of attention would be given to the meaning of the items found in financial, operating and cost statements, and to the significance of the proportion to each other of various subtotals and balances. Study would be planned of trends and tendencies, and of variances from standards and departures from predetermined budget estimates. Much time would be given to thinking about the effect upon an enterprise of a wide variety of events, policies, and decisions of rather complicated nature, and to considering the theories of administration's dependence upon authoritative facts and the theories of accounting which influence the providing of dependable facts.

There is a place for programs of this sort. Obviously accounting courses here take on more prominence than in the program described above. But there should not be too many accounting courses. If one or two specially designed courses should be enough to give the student an appreciation of the social service performed by accounting and accountants, perhaps in the business program four to six courses would be ample. They should be closely articulated to each other however and to the other business subject-matter in the program. Some of the courses will need to deal with bookkeeping techniques and cost finding methods. Such courses will give the student a foundation in the practical arts of accounting and help him to understand business and hold his first job. The remaining accounting courses could very well be much broaders in order to deal interpretatively with financial and cost reports and with the social significance of accounting.

Still other men wish to approach accountancy as a profession and their needs call for another variety of educational program. They could benefit, of course, from gaining an appreciation of accountancy as a social institution and from an understanding of accountancy in its setting of executive use in administration. But these specialists must have more than this. They must have an intimate and detailed

knowledge of accounting ideas and techniques. They must know good methods and bad, and be able to distinguish useful from unnecessary procedures; they must be acquainted with peculiarities of industries and variations between enterprises; they must be able to separate acceptable reasons from specious arguments. This is a formidable array of requirements. A program that will tend to develop powers such as these must be quite different from those that would be suitable to the other purposes.

Whereas the other two types of program may be called General Education and Business Education respectively, the third would be called Professional Education. The pattern of the latter will be different because the intention is different. The student of business may be satisfied to understand accountancy, but the professional student must *know* accountancy. However the latter also needs a wide understanding of various aspects of business: manufacturing processes and industrial peculiarities; organization problems and management policies as to financing, producing and marketing; statistics, budgeting, and controllership. He needs information about the problems of investors, about governmental regulation and taxation of business, about business law, especially in regard to numerous phases of corporation law. As to accountancy, the professional student must be skillfully taught a great deal about the intricacies and techniques of his subject. Auditing has a well-known technique. But the solving of CPA problems has a technique also. The professional accountant needs an ability to penetrate complex situations and a skill in marshaling facts. These can be developed by work with problems. A knowledge of theory too provides the basis for a technique—the technique of forming good judgments among alternatives.

There are then two interrelated factors which exercise predominating influence upon the structure of accounting education: (1) the degree of emphasis that is to be given to the formal study of accounting in comparison with other subjects, and (2) the time which students can afford to spend upon formal education of any kind. The first of these factors is conditioned principally by different theories of how best to prepare to succeed in the profession; the second is partly conditioned by the students' capacity to learn.

Little can be said about making available different types of programs of professional education which will offer clear and direct variations according to students' capacity to learn. About all that is being done is to see that the subject-matter of a given program and the requirements for admission and completion are interrelated, and to plan teaching methods so that they will take into consideration the students' maturity, experience, and previous educational record. Within these limits a variety of useful programs would be possible, but they would be only loosely adopted to specific levels of capacity.

Little basis exists as yet for definite statements that such and such amount of preparation of this and that kind is necessary for a successful career in professional accounting. There are various theories on the subject, but no one theory is likely to predominate until we have assembled and studied much more experience than is now available. An attempt should be made to learn what practitioners think of the results of different types of preparation programs. Every sort of combination of factors can produce and has produced successful practitioners. Yet out of wide variety there must be some combinations which seem to work better than others.

About the time factor, something more definite can be said at this time. When a maximum of useful preparation is desired in a minimum of time, there will be a

tendency to stress accounting techniques alone, thus putting business education aside as secondary and abandoning alltogether general education above the high school. Obviously educational facilities are needed that meet these conditions. Two groups particularly would be served. First are those who have had general education or business education in sufficient measure but have later decided to add a knowledge of accountancy. They need supplementary education either in conjunction with working experience in accounting or in anticipation of it. Then there are those who, for reasons of cost or lack of opportunity, have had little or no formal education along general lines or in business. They may decide that some education in accounting techniques will give them a start in a field where they expect personal experience to extend their training.

Intensely specialized programs of study undoubtedly have a place. Classes after hours and correspondence courses often serve a very useful purpose in this connection. But intensive specialization works under very definite limitations. If used to supplement prior general education, some disadvantage may appear because prior and present subject-matter are not well interwoven. Generally speaking the best time to study the elementary aspects of one subject is at the time other elementary subjects are also in progress. Various conditions may interfere with a complete adoption of such a program but that does not, I think, negative the proposition as good educational theory. When specialization in technique stands very much alone it cannot be expected to lay down a very deep foundation for a career. In fact, it is perhaps better described as providing only an introduction to an opportunity to try to build a career mainly upon personal experience. That avenue has been successfully followed many times.

Has everything been done that can be done to orient a relatively short program of intensive study of accounting techniques to the particular function it is to perform and to adjust it to the particular needs of definite types of individuals? An offhand answer is difficult. Perhaps thoroughgoing educational research would provide a basis for considering the question. But it would seem clear that a given program could not adequately serve widely different individuals.

The educational program might also be studied under an assumption that for analytical purposes the time factor could be ignored. Attention could then be given to the problem of program content regardless of the time it might seem to call for in actual use. A complete education for a career in professional accounting would necessarily be extensive; probably it should run longer than four years. It should be inclusive, that is, cover an adequate general education and a thorough business education in addition to an extensive education in accountancy as such. The method should be one that used a judicious combination of vicarious experience (texts and problems) and personal experience (staff school and accounting employment).

Certain prerequisites would be necessary: (1) For best results students would need to make an early choice of the field and have the necessary time, money, and ability to benefit from an extended preparation; (2) suitable educational programs would have to be available or be organized, (3) extensive cooperation would need to be given by professional firms by means of interim employment, transition schools, and continuation of staff education beyond the CPA certificate. Such a list of prerequisits may seem discouraging; but there is nothing impossible in it, The most difficult to overcome is the first item. Many men decide early upon a career in medicine, law or religion. Many could do so in accountancy as well.

There may be other handicaps to the development of a really complete program. Are we convinced that the public interest and the future welfare of the profession make attempts advisable to provide a more extensive and complete education in this field? Are practitioners ready to extend the kind and amount of cooperation that is necessary? Do we believe with good reason that teaching materials of adequate variety and good quality are ready or could soon be made ready for such a program? Has there been sufficient debate about different types of educational approach so that their relative usefulness can be appraised? Has enough consideration been given to the relative merits of different mixtures or layers of the ingredients of general education, business education, accounting education, working experience?

Handicaps there may be; but progress can be made. Research and debate are needed; experimentation would be helpful. A considerable body of opinion could no doubt be obtained to reveal various ideas of what might constitute an "adequate" general education where a professional accounting career was in view. We could explore and explain the word "thorough" as applied to business education and "extensive" as applied to accounting education. Continued study of such matters could be very fruitful.

Study of an ideal or complete program would probably be of service principally as a point of departure. A program comprehending a reasonable length of time would stand between a complete program and a short, intensive specialization in techniques. A middle-ground program would include technical aspects of accounting, but without great specialization; it would include general and business education, but within closely defined limits. Such a program would fit very well into the plans of most colleges of commerce and schools of business. Since it would usually be limited to four years some subject-matter would be omitted or compressed in comparison with that of a program where more time was available. Where could this compression best be made? Would not some debate on the "theories" of professional education be helpful here?

What proportion of total available time should be devoted to accountancy courses, to collateral and related business courses, and to general education courses? The problem here is not primarily that of establishing criteria by which to classify courses now offered; rather it is to formulate concepts of subject-matter-areas in relation to a professional career. Thought needs to be given to deciding how each area can contribute to the development of a professional man. It is expected of a professional man that he shall be an able technician. Can he deserve the designation "able" in such a field as accountancy without being well-informed about business organization and operation? Can he become suitably informed in other ways than by personal experience? Can he be considered well-informed about business without some understanding of social organization and economic problems in their relation to business? Does the prospective professional man need to study history? Why? How much? Languages, fine arts, mathematics, science, written composition, public speaking? In each case, why? And how much?

To be acceptable every educational dish need not give us directly more power of accomplishing the thing intended. Preparation for a professional career is not all, or even mostly, a matter of acquiring tools and skills. A profession should rest upon wide knowledge rather than narrow training. Education can widen our knowledge in many indirect and unexpected ways. The accounting major who complains that the study of a foreign language will not help him to become an accountant is thinking

of education too narrowly. Although he may not take enough language to become proficient, he will benefit in increased ability to use his own language more effectively. Mathematics is a useful general subject; this is true not because some may think accountancy is mathematical, but because mathematics trains the student to think. So do many other subjects—science, law, economics, statistics. When a man early learns the art of thinking by practicing that art in a variety of subjects, he becomes increasingly capable of later applying in practice a technique of effective thinking to the problems of his special field.

This is not the place to deal specifically with various possible schemes of apportioning general, business, and accounting courses over two or four or more years of study time. The point can be made, however, that it is hard to keep from leaning too far toward one or the other of the three subjects. And a question can be raised whether it might not be useful to prepare a variety of apportionment schemes and then studv the underlying hypothesis of each. Architectural students are sketching buildings they may never see built; and some of the more daring may even be thinking beyond present day designs. But they are learning by so doing. In accounting education perhaps we can learn in a similar way.

I suggest a period of educational research and debate: a time devoted to finding questions and discussing such answers as may be proposed. Some attempts at framing questions are indicated above; here are more. In how many ways could the teaching materials be apportioned into different programs of the same length if we assume that we have five principal ingredients to deal with: (1) personal experience in accounting, (2) formal education in accountancy, (3) personal experience in business, (4) formal business education, (5) formal general education? How could apportionment be made in six different programs that would vary in length from one year to seven? In how many effective ways could the sequence of studies be arranged in each hypothetical program? Would personal experience in accounting be best obtained before, during, or after formal education? Has the usefulness of continuation schools been fully canvassed? Of professional schools? Of postgraduate schools? What kind of organized education is available to men in the profession who are no longer junior assistants? For those who have become certified?

THE AUDITING FUNCTION IN THE FEDERAL GOVERNMENT

JOEL HUNTER

MY PART IN this symposium[1] on federal accounting is the phase which deals with auditing. A review of the not inconsiderable literature on federal accounting reveals that no inquiry of the auditing function in the federal government seems to have been reported upon from the point of view of the professional auditor. As a member of this group, I shall attempt to deal with the subject from the professional auditor's standpoint, although mechanical limitations upon this paper will

[1] See the April, 1942, issue of ACCOUNTING REVIEW (Vol. XVII, No. 2, pp. 73–94).

make it impossible to do more than touch upon a number of subjects which are worthy of elaboration.

At the risk of a certain amount of repetition, I should like first to attempt a definition of some terms which are fundamental to our subject. Apparently confusion exists concerning the meaning of such terms as "accounting" and "auditing" as applied in federal practice.

We are fortunate in having a recent unofficial definition of the term "accounting" which satisfies many of the requirements:

"Accounting is the art of recording, classifying and summarizing in a significant manner and in terms of money, transactions and events which are, in part at least, of a financial character, and the results thereof."[2]

This statement is so clear as to require little comment. As for auditing, the following definition appears in one of the older standard text books:

"Auditing is a systematic examination of the books and records of a business or other organization, in order to ascertain or verify, and to report upon, the facts regarding its financial operations and the results thereof."[3]

The modern concept of the meaning of the term auditing is perhaps best expressed by a quotation of the specific terms of the so-called short form report adopted by the American Institute of Accountants with the approval of the Securities and Exchange Commission:

"We have examined the balance-sheet of the XYZ Company as of February 28, 1941, and the statements of income and surplus for the fiscal year then ended, have reviewed the system of internal control and the accounting procedures of the company and, without making a detailed audit of the transactions, have examined or tested accounting records of the company and other supporting evidence, by methods and to the extent we deemed appropriate. Our examination was made in accordance with generally accepted auditing standards applicable in the circumstances and included all procedures which we considered necessary.

In our opinion, the accompanying balance-sheet and related statements of income and surplus present fairly the position of the XYZ Company at February 28, 1941, and the results of its operations for the fiscal year, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year."[4]

Study of the language of this report indicates what the auditor does, and, by implication, the nature of the process of auditing. It is apparent that the auditor has (1) examined financial statements, (2) reviewed fiscal procedures, and (3) expressed his opinion as to authenticity of the statements and of the procedure, all in accordance with "generally accepted auditing standards" and "accounting principles." It should be fairly clear that auditing is basically a review of matters primarily related to accounting. This suggests immediately the relationship between the auditor and the enterprise which is is called upon to audit. Manifestly a proper job of auditing may not be done unless there is present that degree of independence which is necessary to support complete objectivity. An auditor may not be impartial if he has any interest in the organization under examination for the same reason that a judge may not determine a cause in the results of which he has the slightest personal interest. The rules of professional conduct of the American Institute of Accountants recognize this and

[2] American Institute of Accountants, *Accounting Research Bulletins*, p. 58.

[3] *Montgomery Auditing Theory and Practice*, Fourth Edition, p. 3.

[4] American Institute of Accountants, *Statements on Auditing Procedure*, p. 40.

prohibit members from expressing an opinion with respect to the statements of an enterprise in which the member has a personal financial interest under certain circumstances.[5] The consensus of the profession doubtless goes considerably further than the formal rule. The view of one member of the Institute committee on professional ethics is as follows:

"I believe that our profession and the public interest will best be served if we maintain a strictly independent status in our relations with our clients. It is difficult for me to see how an accountant can successfully maintain this status if he acts as independent auditor and at the same time sits on the board. This is certainly true in the case of a corporation operated for profit and may be true of an institution, which relies on support from the public or state. The difficulty, it seems to me lies in our inability to foresee occasions of possible embarrassment to ourselves or our clients. The public is entitled to assume that the accountant is completely disinterested, and they cannot have that feeling when the auditor has been part of the management."[6]

Before departing from the general subject of auditing it is perhaps appropriate to point out a characteristic of the art of accounting which is not always understood by persons not members of the accounting profession. This attitude may be expressed by a question not infrequently asked general accounting practitioners in some such forms as this, "How can you audit the books of a cotton mill one week, a steel plant the next, and a jewelry store, millinery shop, coal mine and a host of other different kinds of business throughout the year, all with equal skill?" The answer is of course, that accounting principles and auditing standards exist independently of particular kinds of business or other institutions. While different business organizations may feature particular accounting principles and require certain variations in the different audit techniques, the arts of accounting and auditing do not require remaking as the practitioner crosses industry boundaries.

In summary of this discussion of general terms, it may therefore be said that an audit involves the following basic considerations: the authentication of financial statements, approval of fiscal procedure and discharge of financial trusts, by a qualified independent person based upon personal examination of the facts.[7]

GOVERNMENTAL AND INSTITUTIONAL AUDITING

We have seen that auditing of various business enterprises is basically the same regardless of the kind of business or nature of the industry. Different techniques are applied depending upon circumstances encountered and the personal opinion of the auditor. This is true not only of organizations organized for profit but of non-profit institutions as well, including chartiable organizations and units of government. The audit of governmental and charitable enterprises differs only from the audit of a commercial organization as the individual requirements may dictate. There is the same necessity in government and institutional auditing for the authentication of financial statements and validation of whatever fiscal procedure may have been employed. It is equal, necessary that financial trusts be discharged in government and institutions. The primary difference between business and government may be stated, in simplest accounting

[5] American Institute of Accountants, *Rules of Professional Conduct*, Rule #13.

[6] 21 Certified Public Accountant 11.

[7] For extended discussion of present opinion on this topic see the publications of the American Institute of Accountants, *Statements on Auditing Procedure*, and papers presented at its recent annual meetings.

terms, to the effect that business seeks to render a service based upon the profit motive, while in government the profit motive is absent.

It should be quite obvious that the strictest independence of the auditing agency is likewise essential in government. Just as in private business, this independence must be real and may not be jeopardized by the remotest suspicion of political or personal bias. Not only must there be no actual bias; it is necessary that no person should have reasonable cause to suspect the possible existence of such bias or personal interest. This means the auditing agency must be completely independent of the government which it reviews.

From a practical standpoint, and in the republican form of government, independence of the auditing agency is traditionally achieved by placing it under the legislative branch. This device satisfies the requirement of independence, since under our form of government the executive branch, by reason of its activities, contain the elements which require auditing examination.

The government of the United States is the greatest single enterprise ever assembled by mankind. and yet it is not so unique as to require a different statement of the rule. Indeed, the very magnitude and heterogeneity of its operations are such as to call even more imperatively for a clear understanding and application of basic principles. The war effort, involving an enormous expansion of governmental activity, further increases this need. The federal government is, to the professional accountant, merely another accounting and auditing problem, incredibly more vast and complex, to be sure, but nevertheless subject to the same basic principles and standards.

There is urgent necessity for recognizing in the organization of the federal government the distinction between accounting and auditing. It is fundamentally necessary that the audit of the accounts of the federal government be conducted in a way which will produce satisfactory results when judged by the standards customarily employed by members of the accounting profession. It is essential that the accounts and procedures of the federal government be reviewed, the financial statements and fiscal procedures authenticated and approved, and financial trusts be discharged, and that these things be done, according to accepted professional standards, by qualified persons who are independent of the executive. There must be nothing sacrosanct about federal financial affairs. The government belongs to all the people, and they are entitled, at the minimum, to the same protection and information as are the shareholders of an industrial corporation or the contributors to a charitable institution.

SOME AUDIT TECHNIQUES

I should like to digress for a time at this point, to discuss some of the techniques of auditing which have found such general acceptance as to be germane to this discussion. May I repeat that these techniques are applied by the practitioner irrespective of the purpose for which the enterprise was organized or is operated, and almost entirely on the basis of circumstances which many otherwise diverse institutions may have in common. In this writer's view, they are particularly applicable to government.

In my early days as a junior accountant, I returned from an engagement and delivered the working papers to my senior. He looked them over and called my attention to the omission of some important information. As we were pressed for time, I went to the telephone and called the bookkeeper of the business under review and secured the information which the senior had pointed out as missing. When I turned it over to him I was subjected to a scathing

lecture in which it was so forcibly pointed out that an audit cannot be conducted over the telephone, I shall not soon forget it. To add to my discomforture I received the epithet of "telephone auditor" among the boys around the office which stayed with me for several months.

This early experience impressed upon me very strongly the importance of personal contact with the subject matter and personalities involved in the audit. Just as a physician may not appraise the condition of a patient without personal examination, neither may an auditor express a professional opinion without personal contact with the enterprise. Auditing is a professional vocation because of this characteristic. The entire procedure and result, as expressed in the report, is to a very large extent a matter of informed professional opinion. Such an opinion, to be of any value, may not be based upon telephone conversations or correspondence either exclusively or in important part; it must rest upon intimate personal contact.

In a recent famous case, failure of the auditors to examine physical inventories contributed materially to the failure of the audit process to disclose a fraudulent overstatement of inventory property in the financial statements. Standard auditing practice now requires the auditor to make some sort of physical contact with the merchandise representing inventories.[8] Of what use is it for the auditor to enter a warehouse containing many thousands of square feet in which sealed cartons said to contain merchandise are stored, and to spend perhaps one-half a day in counting cartons and occasionally opening a carton and inspecting the contents? While this point is still to a certain extent debatable, it is now generally believed by practicing accountants that this procedure is preferable to complete absence of any contact with inventories.

This brings us to a second technique of auditing which is known as sampling or test-checking. In the beginning, the professional auditor customarily went over all of the figures of the bookkeeper with meticulous care, proving each entry as he went. As the profession grew its members took a larger view. They began to think of their work in realistic terms of results to be obtained. Under circumstances where the accounting procedures are found, upon investigation, to be adequate, it came to be recognized as unnecessary to retrace each step taken by the staff of the accounting department. Instead, the auditor will sample particular kinds of transactions and form conclusions on the basis of the sample or test check. The nature of a fraction of the transactions has been found to be characteristic of the nature of the whole. It is not to be implied that the auditor will in no case check all transactions of a particular kind in modern practice. If, however, a representative sample consisting of a percentage of transactions, is found to be free from essential error, the auditor is justified by experience and under standard practice in accepting the whole as correct.

In the application of the principle of sampling there is an illustration of the necessity for direct personal contact. In practice, the auditor may make a preliminary test of a specified type of transaction. On the basis of this test, he may conclude that a more extensive sampling process is necessary. In the process of making the preliminary test-check the auditor may, on the other hand, decide that it is not necessary to proceed even as far as the extent of the originally conceived preliminary check. The important thing to recognize is the purpose of the check, which is simply to furnish the auditor with a basis for an opinion as to the specific problem in hand.

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[8] American Institute of Accountants, *Statements on Auditing Procedure*, pp. 5–7.

A third technique of auditing is the arrangement of work on particular engagements and the plan and record of the various steps taken during the course of any individual examination. In the well ordered public accounting office, a work or assignment schedule is prepared to indicate the various staff members and the time of each assigned to particular engagements. This is particularly necessary at certain times of the year in order to comply with report and tax return dead lines. It is essential at all times in order to provide adequate staff and emphasis in proportion to relative importance of major task groups. The audit program which is prepared for each engagement includes a description of all of the work to be performed. It is important to recognize that this program may not be prepared at a distance, but must be compiled in the office of the organization which is to be examined. This is true even in instances where the auditor may have acquired considerable familiarity with the business, based upon successive examinations over a period of years. While a skeleton or outline program may be prepared in the auditor's office in such cases, the man in charge on the ground must be given substantial authority to vary the program in accordance with his his own individual judgment and under standard practice and the rules of his organization.

The last technique of auditing to which I shall allude has to do with the element of surprise. It goes hand in hand with the test-check. If management or accounting employees do not know when or exactly what will be checked or the extent of the check which is to be made, the audit process is obviously facilitated and the general tone of the organization is improved.

These major techniques of auditing which I have discussed are simply illustrative of the audit process, and are not to be considered as anything approaching a definitive statement of what the auditor does. They are adverted to in this discussion for the purpose of demonstrating the general underlying similarity in the audit process, whether it be applied to business of this kind or that, to non-profit institutions or to the federal government.

THE GENERAL ACCOUNTING OFFICE

The accounting and auditing activities carried on in respect of federal government accounts are centralized in the General Accounting Office.[9] This office is headed by the Comptroller General and was established by the Budget and Accounting Act of 1921.[10] The Comptroller General is appointed, by its terms, for a period of 15 years and may not succeed himself. He is not subject to control by any other officer and is accountable only to the Congress.

The authority conferred upon the Comptroller General and his office includes the "settlement" of accounts, devising and installing accounting systems, passing upon all financial transactions of the government, and making periodic reports. A large part of his work consists of the settlement of accounts. Most disbursements of federal funds are made by disbursing officers who transmit, at monthly intervals, accounts current, accompanied by supporting vouchers, to the General Accounting Office. In this office a careful examination is made of each item of disbursement on the basis of vouchers presented. If any particular item is questioned, correspondence ensues and the disbursements may be allowed or suspended. If the General Accounting Office finds that an expenditure made by a disbursing officer is illegal, the

[9] See *The Comptroller General* by Harvey C. Mansfield, (New Haven: Yale University Press, 1939). *The Federal Financial System* by Daniel T. Selko, (Washington: The Brookings Institution, 1940.) and *Accounting Procedures of the U. S. Government* by E. F. Bartelt (Chicago: Public Administration Service, 1940) for various views on this subject.

[10] 42 Stat. L. 20 (1921).

usual procedure is for a decision to be entered to that effect, and for the disbursing officer to be held personally liable for the refund of the amount involved. Collection may be made by deduction from salaries or other credits, and, as a last resort, by action on the officer's bond.

Decisions of the Comptroller General are frequently lengthy and highly involved documents. During the life of this agency there has arisen a large body of "common law" dealing with the subject of the legality of federal expenditures.[11] Decisions may also be made by the Comptroller General in advance of actual expenditure.

The Comptroller General has instituted the process known as preaudit. This is evoked on a volunteer basis (but in only 3 to 5 per cent of all federal expenditures) and involves submission of the documents to the Comptroller General before the expenditure is made. Objections have been made to the preaudit on the basis of the length of time required to obtain preaudit clearing.

Other important duties include the countersigning of warrants and requisitions and prescribing accounting systems. Since the Comptroller General examines the accounts of disbursing officers only and not departmental or treasury accounts, he is not in the most favorable position to enforce the requirements of any accounting system which he might devise.

The Comptroller General has custody of all original contracts, payroll and other vouchers, canceled checks and similar documents. The Comptroller General may also receive and pass upon claims against the government which disbursing officers have declined to pay.

From this too brief review it is evident that the work of accounting and auditing which takes place in the General Accounting Office is inextricably intermingled. Although emissaries of this office have gone to the field upon numerous occasions, by far the greater part of its work is done in its own office in Washington.[12] A further consideration, which is frequently overlooked, is that the Comptroller General may, by law and his own interpretation thereof, question particular expenditures only on the basis of legality. He seems thereby effectively prevented from raising issues on the points of expediency or economy.[13]

From the auditing standpoint the Comptroller General attempts to secure an effective review on all the expenditures of the federal government by a meticulous examination of vouchers presented by disbursing officers. Most of the energy and effort of this agency is directed to this end. While keeping the books on disbursements, the Comptroller General audits the accounts of disbursing officers after his own fashion, very much in the manner that a corporation home office audits an imprest petty cash fund submitted by one of its branches, but with one important difference; the test of each expenditure is whether authorized by law. This attitude toward public service is perhaps well expressed by the following quotation:

"There can be no better discharge of any public officer of the responsibility thrust upon him than a certificate from an independent agency that it has audited and settled his accounts and has found

[11] In the fiscal year 1940 alone 2,175 decisions were rendered. (Annual Report of the Comptroller General of the U. S., year ended June 30, 1940, p. 1.)

[12] The same, page 17, contains the statement, "During the fiscal year there were more than 100 employees regularly assigned to field duties. . . ." The personnel of the office on June 30, 1940 is given on p. 3 as 5,195.

[13] "Since legality is the test, it is to be expected that efficiency and economy in administration do not always result. Instances abound of practices required by decisions of the Comptroller General that are maddening to observe when better results could be obtained more quickly and less expensively by different practices." See the discussion by Mansfield in "President's Committee on Administrative Management, Report with Special Studies." (Washington: U. S. Government Printing Office, 1937) pp. 176 and 177.

that he has performed his duties according to law."[14]

Such an attitude is also expressed by the adage to the effect that the man who does nothing makes no mistakes.

The interest and attention of the General Accounting Office are focused upon the minutiae of fiscal affairs with the result that the overall picture becomes completely obscured. With all of the accumulation of documents and work in this office no regular periodic financial statements or reports are issued. By the promulgation of a highly elaborate and involved body of "common law" governing federal expenditures, it is made necessary for the federal administrator to spend a considerable amount of time devising ways of accomplishing the purpose for which the agency is organized to the obvious detriment of such purpose. The inevitable effect of all this upon disbursing officers is to make such officers very sure that each expenditure which they may make will be approved by the Comptroller General. As personal insurers of the legality of each item, they cannot afford to do otherwise. It should be noted further that an attempt to hold authorizing officers of the government in place of disbursing officers has resulted in the Comptroller General holding both classes of officers responsible, but with the complaint that authorizing officers are not required to be bonded and therefore are not so valuable as guarantors.[15] Despite this complaint it is observed authoritatively that bonds are of little practical value in obtaining reimbursement of many items questioned.[16] The whole question of bonding and recoveries from agents of the government has been overemphasized at the expense of more fundamental issues.[17]

Finally it should be stated that such auditing as is done is in large part confined to the quarters of the Comptroller General and based upon documentary evidence which is submitted. The Comptroller General strenuously objects to field work.[18]

ACCOUNTING, AUDITING AND INDEPENDENCE

It has been shown that accounting has to do with recording, classifying and summarizing, in a significant manner, transactions of a financial character; while auditing is the independent scrutiny of such transactions for the purpose of authenticating financial statements and the methods of accumulating financial data,

[14] O. R. McGuire, "Government by Corporations," *Virginia Law Review*, XIV, page 182, as quoted in the President's Committee on Administrative Management Report with special studies by Harvey C. Mansfield, page 174.

[15] Chapter III, "Annual Report of the Comptroller General," *supra*.

[16] "The Federal Financial System," Daniel T. Selko, *op. cit.*, p. 548.

[17] George P. Ellis, in reviewing a recent work on the General Accounting Office, writes as follows:

"One of the main purposes of governmental accounting, he indicates, is to save the government from any loss through the actions of its agents. Yet in no activity of life, in no organization of any kind, is it humanly possible to be 100 per cent right. Why should the government be above loss, at the expense of the personal liability of agents for administrative decisions made in good faith? Apart from legal limitations upon funds, why should the judgment of the Comptroller General's office be superior to the judgment of the administrative officer charged with carrying out a particular responsibility? In the opinion of this reviewer, administrative and disbursing officers should be held liable under their bonds only in cases of dishonesty, for with a new centralized accounting control, postauditing, and current reporting to Congress, questions of statutory interpretation and administrative judgment could be cleared promptly without saddling the entire responsibility upon the individual who made the disbursement." *Public Administration Review*, Vol. I, p. 208.

[18] See note 12, *supra*. He has nevertheless been persuaded to audit the accounts of the TVA in Knoxville.

"In deference to requests of Corporation officials, complete accounts for periods subsequent to February 28, 1939, were not required to be forwarded to Washington for audit. Accordingly, all vouchers and supporting documents were retained in the files of the Corporation and are being audited by personnel detailed to Knoxville, Tenn., for that purpose. Although such procedure results in increased expense to this office and places greater responsibility on the auditors, *it enables the auditors to obtain complete and material information, not otherwise available*, regarding financial transactions, with a minimum of expense and inconvenience to the Corporation." Annual Report of the Comptroller General, *supra*, p. 48. The emphasis has been supplied.

as well as the discharge of financial trusts. Accounting is thus a necessary and indispensable tool of management. At once it furnishes the measure of operations and the gauge of condition. Auditing, on the other hand, is independent and by its very nature must be divorced from management or control of the executive if it is not to be robbed of all significance. Accounting cannot be taken from under the jurisdiction of the executive without serious consequences, while auditing must remain separate and apart from the executive at all times so far as jurisdiction and control are concerned.

It is evident that the respective natures of accounting and of auditing require the view which has been expressed, irrespective of the type of the enterprise. The federal government is no less subject to these precepts than the corner drug store.[19]

We have found that the General Accounting Office is altogether independent of the executive branch. In this office is performed the major accounting functions of the government.[20] Separation of the accounting aspect or phase of governmental finance from the executive is quite as shocking as the removal of the accounting department of an industrial corporation or a large hospital from the direction and control of the executive officers. The result is to impede the orderly process of government and to place the executive continually in the position of attempting to satisfy his own accounting arm. Meanwhile the executive is deprived of the information and assistance which normally might be expected from the accounting agency.

The able servant of the executive has thus become the master and dominates the financial processes of government. In the guise of executing the laws, the General Accounting Office seems to take the position that all federal institutions exist for the major purpose of satisfying the requirements and the interpretations of this agency. Here indeed is a turnabout which seems to justify all that has been said about red tape and bureaucracy in government.

The General Accounting Office claims to exist as a portion of the legislative branch. In actual practice the General Accounting Office is merely independent of the executive; it has only a remote connection with Congress. Congress has no mechanism to control the work of the General Accounting Office; the reports which are rendered by the General Accounting Office to Congress have been irregular and unsatisfactory, and the result has been an equivocal fourth branch of the government which apparently has being for the sole purpose of satisfying itself; it is accountable to no one.

Just why the General Accounting Office occupies its present position is hard to state. There was evidently a great deal of confusion of basic principles in the minds of the law-makers who drafted Title III of the Budget and Accounting Act of 1921, wherein the strange mixture of accounting and auditing appears in defining the Comptroller General's duties. The situation has been aggravated by what has been described as the "well known zeal" of the first Comptroller General for his duties, and by the popular misconception that the Comptroller General is the "Watchdog of the Treasury."

One cannot escape the conclusion that

[19] The views of President Roosevelt on this question are as follows:

"Establish accountability of the Executive to the Congress by providing a genuine independent post-audit of all fiscal transactions by an auditor general, and restore to the Executive complete responsibility for accounts and current transactions."

Message of the President transmitting the Report of the Committee on Administrative Management, January 12, 1937. This was number 5 of the Committee proposals.

[20] Despite the accounting activities of the Comptroller General the Treasury Department accounts, so far as they go, are better organized and certainly more useful.

the General Accounting Office, when judged by ordinary professional standards, has completely failed to function in a satisfactory manner as the accounting department of the federal government. It has done a great deal of work and accumulated a vast quantity of records, but appears to have made no effort to make financial statements available or to interpret the finances of the government to the citizenry. It has without question actually impeded the work of the operating agencies.

It must also be admitted that the General Accounting Office has not performed adequately as the auditor for the federal government.[21] This it could not do in any case by reason of its position as the principal keeper of the very accounts which it is its duty to audit. Despite the vigorous and meticulous examination of "petty cash" expenditures which this office has made in the past, it has not, when tested by the working definition of auditing practitioners, measured up to the standards of performance required of the auditor. It has not authenticated financial statements to any general extent, in fact no comprehensive financial statements are issued. It has not, to an appreciable extent, investigated and approved fiscal procedures. It has very carefully measured the discharge of financial responsibility of certain subordinate officers.

[21] An interesting sidelight on the character of the personnel of the General Accounting Office is afforded by Mansfield's study of salaries paid, reported at p. 152 of *The Comptroller General*. For the year 1938, the last available, this shows only 33 employees, or about six-tenths of one per cent, were receiving annual salaries of $5,000 or more, while 3,613 or nearly 70 per cent (of the total of 5,209) received less than $2,000 annually. Solely on the strength of this criterion the General Accounting Office must be characterized as a huge aggregation of clerks, and as at present constituted, not capable of performing the function of auditing. It is not to be expected that any substantial number of persons qualified by training and outlook to audit the accounts of the federal government will be found within its organization. Compare, for example, the salary scales of employees of the Bureau of Internal Revenue who audit the accounts of taxpayers.

THE REMEDY

The General Accounting Office and its position in the federal government have been the subject of wide differences of opinion, which, though amicable for the most part, have been characterised by very earnest convictions on both sides.[22] The first Comptroller General himself, and spokesmen of his office, have staunchly advocated preserving the *status quo* and even increasing the power and independence of the General Accounting Office.[23] Many students of the problem other than those connected with the General Accounting Office itself have taken a contrary view. I have attempted to demonstrate that it is impossible for a practicing accountant who is fully acquainted with the subject, to arrive at any belief which is radically different from those I have already expressed. This matter received the studied attention of a sub-committee of the American Institute of Accountants which was appointed for this particular purpose.

This committee, after calling for a separation of accounting and auditing functions, indicated the necessity for an independent auditor with no administrative or accounting duties, who would work along the lines of standard audit procedure in the review of transactions and procedures.[24]

[22] This dispute is regarded as but a single phase of the current argument on the position of the executive in the federal government. For a current whimsical note on the underlying controversy, in a literary style which can only be described as remarkable in view of the subject matter, see "Anatomy of Leviathan," *Public Administration Review*, Vol I, p. 392.

[23] Perhaps the best and most recent statement of the Comptroller General's case appears in chapter XXIX of *The Federal Financial System*. The title of this chapter, is significantly, "The Accounting System and Legislative Control."

[24] The full statement of principles proposed by the committee as it appears in *Journal of Accountancy*, 69: 184–185 is as follows:

PRINCIPLES RECOMMENDED AS A BASIS FOR NEEDED CHANGES

1. Recognize and provide for distinguishing the functions of:
   (a) accounting and financial reporting
   (b) preaudit of financial transactions
   (c) independent postaudit.

Almost identical proposals have been made by Professor Harvey C. Mansfield, an authority on the General Accounting Office, whose approach is that of a specialist in public administration.[25] Mr. E. F. Bartelt, the Commissioner of Accounts and Deposits, U. S. Treasury Department, who has earned the respect of administrators and accountants by the spectacular accuracy and dispatch of his handling of federal emergency payments, has several times called for a separation of the auditing function from accounting, and for real-

2. Place the primary responsibility for accounting and departmental reporting on individual departments and agencies, with the provision that certain general principles shall be followed which may be essential to provide information for consolidated reports, that their records are subject to appraisal from time to time as to adequacy and completeness, and that they be subject to independent audit as to accuracy.
3. Provide that in each department there shall be a competent accounting official who will be responsible for the accounts and financial reports of that department, and for internal check, and who shall have adequate training and experience for the responsibility required in each respective department. An agency of Government as well as some professional organization might be asked to have lists of eligible persons available at all times.
4. Provide for a central accounting division which will establish general standards required in the accounts and reports of all departments, and underlying principles to be followed by departments. This agency should act in an advisory capacity to departments and agencies, and should have authority to make occasional examination of records so as to appraise them as to adequacy and completeness. It should have authority to report to the President for action in any case in which its recommendations have not been satisfactorily complied with.
5. Place on each department or agency the responsibility for the preaudit of expenditures.
6. Provide for centralized disbursement procedure through the Treasury Department to the full extent practicable, disbursements to be made on the certification of responsible departmental officers and without liability on the part of the disbursing officers for the details supporting the expenditures. Hold only the heads of certifying agencies responsible for the correctness of disbursements and receipts.
7. Provide for the preparation of consolidated financial statements of the Government by the central accounting agency, compiled from financial reports of the various departments and agencies, which reports the departments should furnish to the central agency on forms provided by it.
8. Provide for an independent auditing officer, corresponding to the present Comptroller General, responsible directly to Congress, with responsibility for postaudit of receipts and expenditures, and verification of financial reports. Postaudit should be substituted for "final settlement" and should constitute release of liability of certifying officers unless evidence is disclosed of fraud or illegal acts, in which case authority for collection or suit should be sought from a standing Congressional committee.
9. Auditing procedures of the independent auditing office should correspond in general and be equal to those employed by public accountants. Provision should be made for a staff of qualified accountants to carry out this function, together with authority to engage private accountants as occasion might indicate to be desirable.
10. Postaudits should be carried out in such a way as to provide as prompt a review as practicable in every case. They should be made at the seat of operation of each department and agency. Original documents should be examined in the field and left in the possession of each agency. The records of the auditing office should be limited to working papers of the type ordinarily maintained by public accountants in similar audits.
11. The independent auditing office during the course of each audit should make an appraisal of the adequacy and completeness of the accounting records and of the system of internal control in each department and agency. It should report on these matters to Congress and to the President.
12. The independent auditing office should promptly review and certify the correctness of at least the annual financial statements prepared by each department and by the central accounting agency for the Government as a whole. The methods of verification and certification in this respect should not be less comprehensive than those employed by public accountants in the audit of commercial concerns.
13. A joint committee of Congress should be created which would stand ready to receive, review, and act continuously on reports from the independent auditing officer.
14. The laws relating to the expenditure of public funds should be codified and redrafted so that no doubt may be left as to the legality of transactions and the limitations imposed by Congress. The independent auditing office should have no power to determine, but only to question, such legality; and it should not be permitted to issue any rules, regulations, or opinions on transactions of doubtful legality. Full power to resolve such questions should be retained by Congress.

[25] Professor Mansfield was the author of the special study on the General Accounting Office which appeared in the Presidents Committee on Administrative Management Report. His later work entitled *The Comptroller General* has also been referred to above. A concise summary of his recommendations appears at pp. 197–199 of the President's Committee's report.

istic control over auditing by Congress.[26] Spokesmen of the accounting and auditing profession, perhaps the leading authority on the General Accounting Office, and a distinguished Treasury career administrator and accountant are all significantly in agreement, both of the necessity for reform and the general shape which the reform should take.

Paraphrasing the Institute committee recommendations, so far as they are concerned with auditing, the following considerations should be observed:

(1) Statutory changes are required to remove all duties of a bookkeeping or administrative nature from the General Accounting Office.

(2) The General Accounting Office, functioning altogether as a post-audit agency (with the name of its chief changed from Comptroller General to Auditor General, and the name of the agency to the General Auditing Office) must be made more responsive to Congress through organization of a Congressional Joint Committee on Audits. This committee would receive the reports of the Auditor General and instruct him as to his future course of action. The Auditor General would have no rule-making power or any authority to disallow expenditures, or to proceed against delinquents, except as special authority were issued by the Joint Congressional Committee.

(3) The General Auditing Office would have large investigatory powers which would be substantially commensurate with those of a Congressional Committee.

(4) The General Auditing Office should adopt and utilize standard audit procedures and technique. Its work should include authentication of financial statements and fiscal procedures. It should not have the duty of devising and installing accounting systems nor of preauditing.

(5) Present expenditure laws should be codified and simplified.

Without question, public accountants are qualified to speak on matters of accounting and auditing through the medium of a committee appointed by the American Institute of Accountants to investigate and report. The Institute group has dealt with the problem and has condemned the present law and the method of operation. Why this conclusion was inevitable to the accountant, it has been the purpose of this paper to show.

The situation has been growing steadily worse from year to year, and the war effort which is now upon us will intensify the trouble. Sooner or later we shall of a surety do something about it. When the time for action comes, it is to be devoutly hoped that the problem will be attacked in realistic fashion, and that the real issues will be clearly stated. The only hope for a permanent and satisfactory solution—one which will permit the operating agencies to function freely, central accounts to be kept in intelligible fashion, and comprehensive and independent audits to be made—lies in following the accounting principles and auditing standards which have been evolved over several generations.

[26] A summary of Mr. Bartelt's views on federal auditing is contained in his "Accounting Procedures of the U. S. Government," *supra*, at pp. 137–138.

KEEPING THE PROPER BALANCE BETWEEN PRACTICAL AND THEORETICAL ACCOUNTING TRAINING

ROYAL D. M. BAUER

A CONSCIENTIOUS teacher of accounting must give serious thought from time to time to the objectives of his courses. Are they providing his students with the best possible training? Will that training fit their future needs more satisfactorily than some alternative type of training which the teacher could give them? Is the teacher maintaining a proper balance between practical and theoretical instruction? Would some change in emphasis improve a course?

Disturbing questions of this type can upset one's complacency. They should do so occasionally in order to help the teacher to do his best work.

Training and experience of a teacher necessarily have a strong influence upon his methods of teaching. There are teachers of accounting whose training and practical experience have both been limited. For example, there was the instructor in a small college in the Middle West who taught economics, sociology, political science, advertising, and two courses in accounting. According to E. L. Kohler,[1] this teacher wrote: "My only knowledge of accounting comes from the textbook I use. I would like to find out whether a reserve for bad debts is really found in practice."[1] It is to be hoped that the students under this teacher at least had the benefit of the use of a good textbook.

It is not necessary for every accounting teacher to have both a Doctor's degree and a C. P. A. certificate. In fact, the lack of practical accounting experience on the part of an able teacher may be advantageous. It may help him to delve into the theoretical aspects of many accounting problems umhampered by the caution and conservatism that one tends to develop in the daily conflicts and compromises of practical business affairs.

Probably the ideal situation for a school is to have its accounting faculty include both the theoretical and the practical types of teachers, the natural leaning and emphasis of each offsetting and complementing the other. By planning the sequence of courses with this in mind, the students will receive some instruction heavily freighted with theory and some devoted mainly to the mechanics of accounting procedures. The results should be stimulating to both students and faculty.

There is such a limited time available in a four-year college course that proper consideration for the student's future requires a review from time to time of the objectives sought and the methods used. The courses to be taken by the student should give him an orientation in his economic environment, they should give him a broad cultural background, and they should give him an adequate technical training in accounting. The college student should be preparing for the position he will hold ten or fifteen years hence; not merely for his first job after graduation.

For the purpose of this discussion, accounting students may be classified into three groups: those who will be satisfied to be bookkeepers indefinitely, those who will advance to important accounting positions and those who will not perform any actual accounting work.

Students with as little ambition and abil-

[1] "Needed: A Research Plan for Accountancy," ACCOUNTING REVIEW, March, 1932.

ity as the first group should rarely be found in college classes. They can get adequate training in the mechanics of record-keeping by attending bookkeeping classes in high school or a commercial business college and perhaps special courses given by the makers of mechanical bookkeeping equipment.

Future accountants constitute a relatively small proportion of college elementary accounting classes. They will be the professional public accountants of the future and the accountants employed in key positions in the business world. They are the students who enroll in the accounting curriculum. It is true, of course, that they are not always the only ones in that curriculum. For example, occasionally a student who does not plan to be an accountant may change over from the general business curriculum to the accounting curriculum on the assumption that accounting training is his best assurance of proper preparation for his future business career.

A large proportion of the elementary accounting class usually consists of students who will not be accountants. They are the casual students of accounting who will be our future business executives, engineers, lawyers, etc. Because of their numbers, they must be given the same consideration as the future accountants, or more, when the elementary course is planned.

Whether a special service course in accounting is designed for a group that will not pursue the subject further, or whether the same introductory course is offered to all students, the proper balance between practical and theoretical training should be considered. When the elementary course is available to diverse types of students, it can be planned to give all of them a proper and satisfactory introduction to the subject. There will be some bookkeeping drill to acquaint the class with recording procedures, but since most members of the class will never be bookkeepers, this part of the course should not be overdone. If there is also a considerable amount of instruction in the philosophy of accounts, the accounting major will be equipped with a good background for advanced study in his field and the casual student will have a theoretical knowledge of the subject that he can retain and that can be valuable to him in years to come.

Selection of a text for an accounting class, whether elementary or advanced, usually involves consideration of the amount of emphasis placed by the author on theoretical aspects of the subject as compared with his treatment of procedures. Types of texts range from the highly theoretical, which deals sparingly with the actual practices of the bookkeeper or accountant, to the opposite kind, which gives copious illustrations of many procedures and seems to avoid definitions and explanations of reasons whenever possible if illustrations can be used instead.

The teacher's presentation to the class should supplement material in the text, and should often disagree with some of it. The written word, however, exerts a strong influence on the reader, merely because it is in printed form, and if a textbook presents outmoded concepts or contains the wrong emphasis on important phases of the subject, the teacher's arguments to the contrary may go unheeded. The new elementary textbook which has failed to keep abreast of accounting progress is criticized vigorously by H. B. Eversole in a recent article.[2] His criticisms are well-founded and deserve the attention of teachers and authors alike. He indicates that college elementary accounting textbook writers have for the most part paid scant attention to the pronouncements and monographs on accounting standards and principles which

[2] "Concerning the Perpetuation of Accounting Fallacies in the Classroom," *Journal of Accountancy*, February, 1942.

have been issued in recent years by the American Institute of Accountants and by the American Accounting Association. A note of caution might be added, to the effect that these pronouncements and monographs have been tentative statements generally, and the people who formulated them had no idea that they were saying the final word. The teacher, therefore, and the writer should be careful not to treat such tentative statements as final.

Accounting courses vary in their needs for theoretical instruction. They range from the fundamentals course, where the student should be introduced to the philosophy of accounts, to the C.P.A. coaching course, where the student is supposed to know theory and the principal emphasis is on the solution of problems likely to be encountered in an approaching C.P.A. examination. There is a justifiable tendency to stress procedures in some of the advanced courses, such as the coaching course just mentioned, or an advanced problems course which gives seniors a review of their previous accounting work, or, to some extent, an auditing course for advanced students.

Instruction in an auditing course should not ignore accounting theory entirely. According to Paul E. Bacas,[3] the instruction should "include not only application of principles to a certain transaction, but the application of the principles to the same type of transactions under varying conditions and circumstances."[3] Since auditing is usually an advanced course, following others which have dealt with bookkeeping, theory of accounting, and accounting problems, Mr. Bacas states that "it should not include detailed discussions of principles of accounting or give any basic instruction in such principles."

An intermediate course in accounting which deals principally with the balance sheet, the statement of profit and loss, and special forms of financial statements, offers a good opportunity for the teacher to stress either theory or practice. The elementary course will have introduced the students to the fundamental principles of accounting, and the teacher of the intermediate course may prefer to develop the skill of his class in constructing the various financial statements. On the other hand, the elementary course will have introduced the students also to the techniques of bookkeeping, and the intermediate teacher may prefer to lead his class into an extensive theoretical study of valuation and of the purposes of financial statements. If the intermediate course is largely theoretical, the emphasis on theory can readily be carried to the more advanced courses. If the intermediate course is largely practical, it will limit the amount of theoretical work in advanced courses.

A teacher may feel little need to give theoretical instruction beyond the barest minimum in an elementary accounting course, prefering that his students know "how" rather than "why" and thus acquire the maximum bookkeeping skill in the time available. Another teacher will treat the acquisition of bookkeeping skill as a relatively unimportant matter, and try instead to impress on his class the need for a knowledge of accounting principles. There must be some of each in a good elementary course. Opinions differ as to the proportions.

If the teacher of a college accounting course directs his instruction largely toward the best students in his class, believing that they will be the real leaders of the future and should therefore be given special attention, his principal emphasis will probably be on theory. He will feel that he can perform the greatest service by attempting to train the few potential real leaders in the class and let the remaining students trail along and get as much as they can from the instruction. If the teach-

[3] "Content of the Auditing Course," ACCOUNTING REVIEW, September, 1939.

er's chief concern is the poorer students in his class, it is probable that he will set a pace to accommodate them and confine his instruction largely to procedures.

In an article published about a year ago, Sidney G. Winter[4] refers to the two paths which accounting instruction has followed in general. He then quotes from a paper written by J. Hugh Jackson about twenty years ago, as follows: "In a broad way, at least, we may say that there are two schools in accounting instruction, (a) that school which emphasizes primarily the philosophy of accounts, and (b) that school which emphasizes primarily the mechanics of accounting. Probably every accounting instructor will say most emphatically that his institution believes in emphasizing both the philosophy and mechanics of the subject, but a little study of the actual methods of instruction in vogue will usually demonstrate that the one or the other is given a decided preference in the classroom." Mr. Jackson further states that "the ideal situation must combine in the classroom the teaching of the philosophy or the fundamental principles of accounting, and of the *correct* accounting procedure." Mr. Winter concurs in this, but with the qualification that he is "still very far from being convinced that much can be done in the matter of teaching procedures in the classroom."

An advocate of the theoretical type of accounting instruction in college, Willard J. Graham[5] states that the courses "should emphasize fundamental principles and theory, and managerial uses of accounting information, rather than bookkeeping procedures, routines and technique." He would not omit training in technique, but insists "that proper emphasis be given to the analysis of the *reasons* for these procedures, so that graduates from these specialized accounting courses may be well-rounded, analytically-minded business accountants rather than highly skilled technical bookkeepers and problem solvers." He believes that these graduates should secure the most detailed of their technical training *after* graduation in the offices of their employers.

We may all agree on the general principle that the instruction given to a college accounting class should contain some theory and some practice, but the proper balance between the two is still largely a matter of personal opinion. If two teachers disagree as to the proper balance, it may be that the philosophy of a typically Chinese viewpoint expressed by Dr. Lin Yutang will apply, that is, "A is right, but B is not wrong either."

[4] "What is Proper Training for Accountants?" Accounting Review, June, 1941.

[5] "Accounting Education, Ethics and Training," Accounting Review, September, 1939.

THE ENTITY APPROACH TO CONSOLIDATED STATEMENTS

Maurice Moonitz

Lack of a generally accepted theory of consolidation leads to a confusing array of alternative and sometimes contradictory and inconsistent procedures. Failure to formulate an adequate theory is related primarily to a lack of precision in recognizing the implications of the explicit purposes for which consolidated statements may be prepared. The present paper is an attempt to formulate the outline of a unified theory based upon a single premise as to the consolidation objective.

The central premise is that consolidated statements are exhibits in conventional accounting form of the status and the operations of a group of related companies—exhibits prepared as though the companies were legally as well as economically mere administrative subdivisions of one concern. The legal separateness of each unit is disregarded, the fiction of separate corporate entities ignored. Legal lines of cleavage are replaced by the more useful but less definite boundaries of economic unity. That consolidated statements are of primary interest to investors and creditors of the dominant company is a corollary of our major premise.[1]

The diminution in importance of the legal separateness of each affiliated corporation is based upon another legal consideration, namely, that a company which owns a majority of the voting stock of another corporation possesses the legal power to determine the policies and practices of the latter concern. Because of the continued importance of legal separateness, however, for purposes such as dividends, creditors' rights, etc., consolidated statements should never be presented apart from the legal statements of the parent company.

For convenience and brevity in exposition, illustrative material will deal with the consolidated balance sheet alone. The reader may usually extend the discussion without difficulty to the consolidated income statement. Also ignored are the mechanical and procedural difficulties arising out of a multitude of affiliated companies. Certain compromise or approximating procedures are employed in practice to reduce the volume of clerical labor involved. Provided these procedures are recognized for what they are, no conflict should exist between an adequate theory and the practices described in accounting manuals.

[1] It should be noted that the premise stated is not the only one on which a consistent theory may be built. For example, consolidated statements may be constructed on the assumption that the affiliated companies constitute a copartnership, or that these statements are mere statistical compilations whose purpose is to clarify and amplify the statements of a parent company. No attempt will be made in this paper to explore the implications of the alternative assumptions.

THE LEGAL AND ECONOMIC CONCEPTS OF CONTROL

The substitution of the concept of economic entity for that of legal entity raises the problem of the scope of the consolidation. In principle the solution of the problem is clear, namely, include all those companies whose policies are controlled by a dominant parent corporation. The usual rule cited in this connection states that no company should be included in which the dominant corporation owns directly or indirectly less than 50 per cent of the voting shares, but this rule is clearly not applicable to all situations. For example, the Securities and Exchange Commission required consolidation where a parent company owned merely 28 per cent of a subsidiary's outstanding voting stock but was able, with this proportion of voting power, to control the subsidiary.[2] Except for special purposes such as income taxation, then, definite quantitative limits applicable to all situations cannot be formulated. Some examples of general rules, couched in nonquantitative terms and consistent with our major principle, are given immediately below.

1. Exclude companies in which control is not reinforced by some legal means such as stock ownership. This rule has the effect of excluding those situations in which control may exist but is not the subject of objective measure, such as banker domination through control of credit facilities.
2. Exclude companies controlled incidentally or temporarily.
3. Exclude the operations of foreign subsidiaries beyond effective control by the parent company.

[2] A. J. Fisher, "Accounting Cases," ACCOUNTING REVIEW, June, 1940.

GENERAL PROCEDURE

In the preparation of a consolidated balance sheet the entity concept requires the elimination of all items representing purely intercompany transactions. These items fall into two major categories:

1. Intercompany debts.
2. Intercompany holdings of shares of stock. This category is discussed below in connection with consolidated goodwill.

The first category refers to a debtor-creditor relationship evidenced by offsetting pairs of receivables and payables. For example, Company P may show among its assets an account receivable from its affiliated Company S of $5,000, a dividend receivable of $10,000, a loan or advance to S of $8,000, and an accrued interest receivable of $200. On the books of S, corresponding liabilities will appear indicating the indebtedness of that company to Company P. Offsetting pairs of accounts such as those mentioned are eliminated for the reason that they have no significance from the point of view of the group as a whole. When the loan was made by P to S, cash was transferred from one unit to another, but no change in total cash of all the companies occurred. Similarly, when the loan is repaid, cash will move in the opposite direction, but no alteration in total cash resources of the group is effected. The only receivables and payables of significance in a consolidated balance sheet are those referring to claims involving legal persons outside the affiliated group.

The entity concept also requires the presentation of assets and liabilities at figures consistent with the viewpoint of a single operating unit. The stockholders of the parent company acting through a board of directors to whom power of administration is delegated constitute the controlling or dominant interest. Consequently, assets must be listed in terms of their relation to the dominant interest. The reference here is to the treatment of intercompany markups in inventories and fixed assets, the computation of consolidated goodwill, the treatment of mutual or reciprocal holdings of stocks and bonds, and of minority interest. These topics will be discussed in the order indicated.

Intercompany markups in inventories. For purposes of our discussion, we shall adhere to the rule that inventories are to be shown at cost. From our central premise it follows that we must compute cost in terms of the entity as a whole. For example, Company P controls Companies A and B. Company A buys raw materials for $10,000, adds labor and overhead of $12,000, and sells the product to Company B for $30,000. Company B in turn adds labor and overhead of $8,000, and passes the merchandise to Company P for $50,000. Company P holds the merchandise at the date of the consolidated balance sheet.

The cost to the entity as a whole of the inventory held by P is $30,000, computed by adding the cost to A of raw materials, $10,000, the cost to A of labor and overhead, $12,000, and the cost to B of labor and overhead, $8,000. No profit has been "realized" or evidenced by a sale to an outsider, consequently we must eliminate the intercompany markup or profit included in the reports of Companies A and B. So long as the inventory remains within the affiliated group, the cost rule we have adopted together with our central premise compel us to ignore as fictitious any markups resulting solely from a transfer within the group.

In arriving at the proper figure for inclusion in a consolidated statement, an apparent but not a real exception exists in the practice of adding costs of transport between companies to the costs of materials, labor, and overhead. The exception is merely apparent because the cost rule acknowledges cartage as a legitimate component of acquisition price.

The practice of eliminating merely that

portion of the intercompany markup accruing to a parent company is clearly at variance with the entity concept. In the presence of minority interests in subsidiaries, this practice is defended on the ground that intercompany markups represent realized profits to the minority stockholders of the vendor corporation; consequently, no elimination should be made of their share of such profits. Against this reasoning we call attention to two considerations:

1. Consolidated statements are not prepared for the purpose of informing minority interests of the status of their investments. For this information, minority interests must refer to the statements of the company in which they have an equity.

2. To eliminate merely a portion of intercompany markup is to present an inventory figure computed on two bases: one portion of the inventory is computed at cost to the entity, the other portion at cost to one legal unit within the entity. The addition of the two portions results in a figure which has little or no significance from either statistics or accounting.

The problem of the treatment of minority interests is discussed separately later in this paper. At this point it is sufficient to note that the figure attached to inventory in a consolidated balance sheet should not be a function of the number of shares in a subsidiary which a parent company happens to own at the date of the statement.

Intercompany markups in fixed assets. Considerations similar to those advanced in connection with inventories are also applicable to the case of intercompany transfers of fixed assets. A complication is introduced, however, by the fact that the purchasing company will in all probability compute its depreciation on the basis of its acquisition price, including intercompany markup. For example, Company A sells a fixed asset to an affiliated concern, Company B, for $1,000. The cost of Company A was $800; consequently, an intercompany markup exists of $200, or 20 per cent of the sales price. Company B depreciates the asset on the straight-line basis with an assumed life of five years and no scrap value. For ease in computing the amount of intercompany markup to be eliminated in consolidation, a schedule of the following type is recommended.

End of year	*Book value on basis of cost to B less depreciation*	*Book value on basis of cost to vendor (A) (80% of column 2)*	*Intercompany markup to be eliminated*
—	$1,000	$800	$200
1	800	640	160
2	600	480	120
3	400	320	80
4	200	160	40
5	—	—	—

Thus, the figures for "End of year 3" indicate that Company B, the legal owner of the fixed asset, carries it at $1,000 less $600, a net book value of $400. However, on the basis of cost to the entity the asset has a carrying value of $800 less $480, a net book value of $320. As indicated in the last column, for purposes of consolidation the fixed asset carried at $400 on B's books should be reduced to $320.

For the same reasons as those cited in connection with inventories, the practice of eliminating merely the portion of the markup accruing to a parent company is inconsistent with the entity point of view.

Consolidated goodwill. Except where a parent company forms a subsidiary corporation, the price paid for an interest in a subsidiary is usually different from the book value of the equity acquired. As a consequence, before elimination of this special form of intercompany account is possible, a reconciliation of the price paid and the value of the equity acquired is necessary.

In the event that the consideration paid is greater than the book value of the equity acquired, the following possibilities must be considered:

1. Specific assets of the subsidiary are undervalued. In consolidation, then, the remedy is to adjust those assets upward.

2. Specific debts of the subsidiary are overvalued; in consolidation this situation calls for a decrease in the recorded value of the subsidiary's liabilities.

3. The parent company suffered a loss on a purchase. In view of the accounting convention against recognizing gains or losses on purchases, this possibility is not likely to be seriously considered. It is, nevertheless, a formal possibility.

4. If securities of a parent company rather than cash or its equivalent was the consideration involved, a discount on those securities may be present.

5. Although not recorded in the subsidiary's records, goodwill may be presumed to exist, or it may be expected to arise as the result of increased profitability flowing from affiliation with other companies.

Once the situation is recognized, the procedure under cases (1) through (4) is clear. The fifth case is the one most generally presumed to exist and gives rise to the principal difficulties associated with the elimination of intercompany shareholdings. The magnitude of goodwill is primarily a matter of estimate based upon appraisal of the subsidiary involved; in consolidation, however, the ruling assumption seems to be that the minimum value of the subsidiary at date of acquisition is established by the price paid for its stock by the parent company.[3] Thus, if Company P acquires all the stock of Company S for $100,000 cash and the book value of the net worth of S is $80,000, goodwill of $20,000 is recognized and introduced in the consolidated balance sheet.

If Company P acquires something less than 100 per cent of the stock of S, current practice requires a peculiar and illogical procedure derived probably from a general distrust of goodwill coupled with the accountant's inherent conservatism. The practice referred to makes goodwill equal to the difference between the price paid and the book value at date of acquisition of the equity acquired. Thus, if Company P pays $90,000 for a 90 per cent interest in S, whose net worth is $80,000 at date of acquisition, then goodwill is computed as the difference between $90,000 and 90 per cent of $80,000, or $18,000. If P pays $80,000 for an 80 per cent interest, goodwill is computed as $16,000. Yet in each case Company P is acquiring the stock of S on the same basis; in each case, P is paying 125 per cent of the book value of the stock of S. On the basis of the price paid by P, the net worth of S has a value of at least 125 per cent of $80,000, or $100,000; consequently in each instance goodwill of $20,000 should be recognized.

The prevailing practice is usually defended on the grounds that goodwill should only be entered at the price paid for it. Since Company P did not buy the goodwill of S but bought its capital stock, the rule relied on is inapplicable. What was acquired by P was an equity in a subsidiary large enough to enable it to control all the assets of the subsidiary including any superior earning power already existent or created through affiliation.

The problem of appraisal of the magnitude of goodwill is admittedly difficult, but no logic exists in the conventional procedure of treating goodwill as a gap-filler. If practitioners feel squeamish about showing all the goodwill evidenced by the price paid by a parent company then, in consolidation, let them eliminate it altogether, thus admitting that the item is of such a tenuous nature that they are not willing to vouch for its probable existence. To show all or none of the goodwill is defensible on both logical and practical grounds; the

[3] For a more complete discussion of this point see the series of articles by L. A. Carman, C. P. A., on "Intercorporate Relationships" in the *American Accountants*, April, May, June, July, 1932.

present procedure is not, since it makes goodwill a function of the number of shares acquired, not a function of any attribute such as superior earning power of either a legal or an economic entity.

The opposite case, that of acquiring an interest in a subsidiary at less than book value may be subjected to a similar analysis.

Reciprocal holdings of bonds and stocks. Let us assume that Company P has bonds outstanding, face value, $500,000, issued at a premium of $50,000. The bonds mature ten years from date of issue; five years have elapsed since issue and, on the straight-line method of amortization of premium, the bonds are now carried by P at $500,000 plus $25,000 unamortized premium. Company S, an affiliated concern, acquires one-half of this issue on the open market for $260,000. In consolidation intercompany accounts are eliminated, but in this case a difficulty arises because S acquired the bonds at less than book value, thus making a direct elimination impossible.

A complete analysis of this situation would require knowledge of the reason for the discrepancy. No matter what the reason for the discrepancy, however, the effect on the group as a whole is apparent. A debt carried on the books at $262,500 (one-half of $500,000 plus one-half of $25,000) has been paid for with $260,000; consolidated debts decrease $262,500, consolidated assets decrease $260,000, consequently consolidated net worth increases $2,500.

The bonds probably will be held "alive" by S until maturity, but this practice has no effect on the consolidation. When interest payments are made, P will turn over cash to S but consolidated cash will not be affected thereby. When the bonds mature, $250,000 will be paid by P to S; again, no alteration in consolidated cash occurs. The effective date of payment of half the debt is clearly the date on which S acquired the bonds.

Because of the legal provisions surrounding a bond issue, and because S is usually free to sell the bonds, it is better to indicate the details of the bond issue somewhat as follows:

First Mortgage Bonds Payable of Company P	$500,000	
Less: Held by Company S	250,000	$250,000
Unamortized Premium on Bonds Payable		12,500

The case of reciprocal or mutual holdings of stock is analogous to that of reciprocal bondholdings just discussed. The capital of a group is reduced whenever any of the outstanding shares of one of the companies is acquired by an affiliate, just as the capital of an individual concern is reduced when it acquires treasury shares. At the present time neither accounting practice nor corporation law fully recognizes the essential similarity of reciprocally held shares and treasury stock. The use of a subsidiary as a tool for evading restrictions on dealings in treasury stock is, however, recognized in the California Corporation Law which imposes the same restraints on dealings in parent company's shares as in a concern's own stock.[4]

The treatment of minority interest. Existence of a subsidiary's outstanding shares not owned by any affiliated company gives rise to the phenomenon of minority interest. Minority interest serves as a reminder that complete community of interest in the affiliated companies does not exist, and this divergence of interest must be recognized.

In accord with our fundamental premise, a consolidated balance sheet contains a list of the assets and liabilities assignable to an affiliated group treated as a single

[4] For a fuller discussion of reciprocal stockholdings together with citations and references, see M. Moonitz, "Mutual stockholdings in consolidated statements," *Journal of Accountancy*, Vol. 68, no. 4 (October, 1939), pp. 227–235.

operating unit. The net worth or capital is therefore the net worth of the whole group. In the event of complete ownership within the group of all subsidiaries, all the net worth is assignable to the stockholders of the dominant company. In the presence of a minority interest, however, to attribute all net worth to the controlling interest is erroneous; consequently, in presenting the amount of the controlling interest, a deduction must be made from total net worth. The deduction need not be explicit, but may instead be shown in conventional form somewhat as follows:

CAPITAL		
Controlling Interest:		
Capital Stock—Company P.	$500,000	
Consolidated Surplus.......	$244,000	$744,000
Minority Interest:		
Capital Stock of Company S (10%)..................	$ 10,000	
Surplus of Company S.....	5,300	15,300
Total Capital......................		$759,300

To show minority interest as a liability is inconsistent with the entity approach. The fundamental attribute of the affiliated group is its economic unity; the manner in which the shares of stock are distributed is of secondary importance. The essential unity of the group is not disturbed by the existence or absence of a minority interest nor is the amount of assets or of liabilities altered merely by a shift in the percentage of ownership of a subsidiary. As a consequence, the existence of a minority interest should not occasion any increase in the reported debts of the group.

The primary purpose of a consolidated statement is not to yield information to minority stockholders; the inclusion of minority interest is for the purpose of preventing an exaggerated showing of the extent of the equity of the controlling interest.

From the foregoing considerations it follows that the amount assigned to minority interest is calculated after giving effect to adjustments arising out of consolidation. Thus, if the book value of a 10% minority interest in Company S is $16,000, but $7,000 of intercompany profit in inventories has been recorded by S, then in consolidation the $7,000 is eliminated and the minority interest is shown at $15,300 ($16,000 less 10% of $7,000).

Although incomplete, the preceding outline should be sufficiently extensive to indicate the manner in which a single unifying principle in conjunction with well-established accounting conventions may be welded into a coherent theory of consolidation. The principal omission in the present paper, as already noted, is the lack of any discussion of the problems involved in preparing a consolidated income statement. Also the very real difficulties associated with the designing of appropriate mechanical aids such as work-sheets, schedules, etc., have been glossed over. Manifestly, however, the mechanics of procedure must rest on a pre-existing foundation of theory to give direction and support to the tedious task of computation and compilation. Once we have agreed on what we are attempting, we may safely trust the ingenuity of accountants to furnish us with the means necessary to the successful completion of our project.

ABANDONED PROPERTY AND THE RATE BASE

FRANKLIN H. COOK

THE UTILITY commissions of every state in the United States and the federal agencies determining the rate of return for a utility, use the rule of *Smyth v. Ames*[1] that the net return of a utility should be equal to a fair return on the fair value of its property. This rule in practice and interpretation has come to mean that Income minus Expenses is equal to a Net Return which should be approximately 7% of the used and useful property of the utility. Under ideal conditions when a utility is earning a proper return the equation by eliminating the common element of "Net Return" should be:

$$\underset{1}{\text{Income}} \text{ minus } \underset{2}{\text{Expenses}} \text{ equals } \underset{3}{7\%} \text{ on } \underset{4}{\text{Rate Base.}}$$[2]

For the purpose of this study a comparison will be made between Expenses, and the Rate Base, to determine which is the dominant factor in giving the consumer a high or low rate. The basis for this comparison will be the treatment of abandoned property by the commissions fixing the rates, when called upon to include abandoned property in the rate base, and again when compelled to decide the accounting procedure of handling abandoned property in an enterprise which may possess no surplus account with which to absorb any extraordinary loss, and must therefore amortize such abandoned property through operating expenses. The paper is divided into two parts, the first of which considers abandoned property in the rate base, the second, accounting for abandoned property.

ABANDONED PROPERTY IN THE RATE BASE

The cases dealing with abandoned property of a utility in obtaining a fair value fall within the following groups: Those cases that exclude abandoned property from the valuation; those cases that include the salvage value; those cases that include abandoned property at book value in the valuation; and those cases that consider the accounting methods of the utility before deciding whether to include or exclude the value of abandoned property or any portion thereof.

Abandoned Property Excluded. Exclusion from the rate base of property neither used nor useful is the general rule. Decisions indicate that it is immaterial whether a state follows the cost of reproduction theory or the prudent investment approach; in either case abandoned property is excluded. New York excluded abandoned property under the cost of reproduction theory of valuation;[3] North Dakota in

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[1] 169 U. S. 466, 546–7 (1898).

[2] Because the valuation obtained for rate-determination purposes cannot be employed for any other uses, such as the sale of the utility, tax base, or value for security issues, "Fair Value" under the *Smyth Rule* in the utility filed means "Rate Base."

[3] Valuation of the investment does not include property which is antecedent to the present system. *Re Yonkers Railroad Co.*, P.U.R. 1933B, 61. Unused and obsolete generating plants are not included in the rate base even though used as standby plants. *Re Long Island Lighting Co.*, 18 P.U.R. (N.S.) 65 (1935). The site of an abandoned gas plant is not included in the rate base for it is no longer used or useful. Likewise, property retired on the books should be excluded from the rate base. *Re Brooklyn Borough Gas Co.*, 21 P.U.R (N.S.) 3531 364, 381 (1937). In *Hoffman v. Elmira Water, Light and Railroad Co.*, P.U.R. 1920D, 266, where unused and abandoned property was excluded from the valuation, the commission stated that since reserves for its retirement had not been set up the stockholder should suffer. In *Re Republic Light, Heat & Power Co.* (1940), 35 P.U.R. (N.S.) 94, the cost of all unproductive gas leases were to be eliminated from book cost in determining the proper charge for gas.

Grand Forks v. Red River Power Co., 12 P.U.R. (N.S.) 353, 369 (1936), excluded it under the prudent investment theory. In the latter case a hydro-electric plant used only in April when there was no peak load was held to be not used and useful property and could not be included in the rate base, even though a prudent investment when made.[4]

Ohio,[5] Pennsylvania,[6] Texas,[7] Washington,[8] and Idaho[9] exclude abandoned property from rate base valuation.

Inclusion of Abandoned Property at Salvage Value. If the abandoned property has salvage or second-hand value, several states include such value in the rate base.[10] Although Pennsylvania generally excludes non-useful property, in *Knoxville v. South Pittsburgh Water Co.*, P.U.R. 1928B, 294 (Pa.), an abandoned river crib was included at its second-hand value. Likewise, the Washington commission in *Department of Public Service v. Grays Harbor Railroad & Light Co.*, 12 P.U.R. (N.S.) 178 (1936) (Wash.), permitted an abandoned street railway to be included at its value solely for purposes of hauling fuel and supplies to the power plant. In *Marlborough Elec. Petition*, P.U.R. 1915C, 665 Massachusetts states the rule that inactive property will be included in the rate base, but not at the same value as active property. Ultimately it is written off.

Inclusion of Abandoned Property in Rate Base. The previous cases have either excluded abandoned property entirely from the rate base or included it at its salvage or second-hand value. Only Maine has included abandoned property in its rate base at its book value. In *Biddefor & S. Water Co. v. Itself*, P.U.R. 1920B, 580, abandoned property was included in the rate base because there was no surplus against which to charge it, nor was there sufficient income against which to amortize it. Herein the court looked to the accounting methods of the utility, and did not exclude the abandoned property from the rate base without any thought as to the actual treatment of the property on the books of the company. The Supreme Court of New Brunswick which is not bound by *Smyth v.*

[4] This same position is taken by Missouri in *Public Service Commission v. St. Joseph Railroad, Light, Heat and Power Co.*, 14 P.U.R. (N.S.) 113, 119 125 (1936), wherein an abandoned right of way and a park acquired by a street railway were not included in the rate base, even though a prudent investment when made. In *Re Pacific Gas & Electric Co.*, 1 P.U.R. (N.S.) 1 (1933) the value of abandoned property above the depreciation reserve was not included in the rate base, but amortized in the future against operating expenses. The stockholder should be protected, for the investment was prudently made. Massachusetts went one step further in protecting the investor in *Marlborough Electric Petition*, P.U.R. 1915C, 665, wherein abandoned property was included in the rate base, although not at the same value as active property, to protect an investment prudently made.

[5] A storage container for artificial gas was not included in the rate base where the company changed to natural gas. *Re Columbus Gas & Fuel Co.*, P.U.R. 1933A, 337, 362. A steam plant of small capacity was excluded from the rate base where no longer used or useful to a company changing to hydro generation. *Re Northwestern Electric Co.*, 3 P.U.R. (N.S.) 1, 11 (1934).

[6] In *Enels v. Biglerville Water Co.*, P.U.R. 1925E, 110, abandoned wells not used or useful were excluded from historical cost. In *Knoxville v. South Pittsburgh Water Co.*, P.U.R. 1928B, 204, where reproduction cost was used, an abandoned ash conveyor was excluded from the rate base. However, an abandoned river crib which had served its useful life was included at second-hand value, 1/7 of the utility company's estimate. In *Re State College* Application Docket, N. 23790, Oct. 22, 1934, abandoned wells were excluded from the valuation for rate purposes, but included in the purchase price. Securities cannot be issued against abandoned property, *Re Bondholders Protective* Committee of Erie Railroad Co., 24 P.U.R. (N.S.) 433 (1938). Finally, abandoned property cannot pe included in capital accounts at the time of merger of two utilities. Losses should be amortized according to the Commission's uniform accounting system, *Robinson Ventilating Co. v. Harmony Electric Co.*, P.U.R. 1930D, 117.

[7] *Re Lone Star Gas Co.*, Gas Utilities Docket No. 75, Sept. 13, 1933.

[8] Property unused for several years and not practicable to be put into service again is not included in rate base. *Department of Public Works v. Seattle Gas Co.*, 3 P.U.R. (N.S.) 433 (1934). An old machine shop and tool house were excluded from the rate base when a new car barn with similar facilities was constructed. *Department Public Service v. Grays Harbor Railroad and Light Co.*, 12 P.U.R. (N.S.) 178 (1936). Vessels and property out of service were not included in the rate base of a steamship company. *Department Public Service v. Puget Sound Navigation Co.*, 21 P.U.R. (N.S.) 177 (1937).

[9] *Taylor v. Northwest Light and Water Co.*, P.U.R. 1916A, 372.

[10] *University City v. West St. Louis Water & Light Co.*, P.U.R. 1928D, 322 (Mo.) and *Milne v. Montpelier and B. Light and Power Co.*, P.U.R. 1920E, 558 (Vt.).

Ames through dicta in *King v. Board of Commissioners*, 6 P.U.R. (N.S.) 179, 183 (1934) expressed its view that abandoned property should be included in the capital account of the utility and dividends paid on it. The court felt that the stockholders should benefit from all improvements; otherwise, the utility would have no incentive to make improvements.

Accounting as a Factor in Exclusion or Inclusion. We have observed that some commissions divorce valuation procedure from accounting principles, the figures of the accountant and his problems are not considered when abandoned property is excluded. Other commissions are more realistic, although they may not be as extreme as the Maine Commission in the *Biddeford case*, and include abandoned property in the rate base because it cannot be written off against income or surplus account. Several commissions follow the common sense point of view that if there is any difference between the salvage value and the depreciation reserve, such excess should be amortized in the future through a "Property Abandoned" account or some similar account, but should not be included in the rate base.[11] Thus, they permit the abandoned property to be reflected as an expense. Another method of placing abandoned property in operating expenses is to make the regular depreciation charge heavy enough so that when property must be abandoned, the reserve will be sufficiently large to absorb it.[12] The last method of treatment of abandoned property does not amortize over the future any excess amount above the reserve for depreciation. but charges such excess sum immediately to surplus.[13] This method of course presumes the existence of a surplus.

In summary the previous cases indicate that New York, Ohio, Texas, Washington, Idaho and Pennsylvania exclude abandoned property from the rate base. Maine will include it when the utility has no surplus or income against which to charge it. Pennsylvania modifies its stand on exclusion, by holding that if the property has any second-hand value such value will be included. Missouri and Vermont also include abandoned property in the rate base at salvage value. Massachusetts will include it at less than the value of active property. Although California, Indiana, and New Brunswick will not permit abandoned property to be included in the rate base they will permit it to be debited to an "Abandoned Property" account which is then written off through operating ex-

[11] Abandoned property is not included in rate base but value above depreciation reserve and salvage value is charged to "Property Abandoned" account and amortized in future against operating expenses. *Re Pacific Gas & Electric Co.*, 1 P.U.R. (N.S.) 1 (1933) (Cal.); *Re Coast Counties Gas & Electric Co.*, P.U.R. 1931B, 105, 107 (Cal). Abandoned generating plant was not included in rate base, but if not written off through depreciation, it may be amortized in the future through operating expenses. The investor should be protected. *Fredericton v. Maritime Electric Co.*, 6 P.U.R. (N.S.) 157, (1934). This case was decided by the New Brunswick Board of Public Utility Commissioners. Note how they follow the position of the New Brunswick Supreme Court in protecting the investor.

[12] Old taxicabs having no junk value were excluded from valuation where an ample reserve was provided. *Re Terminal Taxicab Co.*, P.U.R. 1915B, 546 (D.C.). Abandoned property was written off against depreciation reserve. *Re Lansing Fuel & Gas Co.*, P.U.R. 1921D, 387 (Mich.). All superseded property was written off. *Re Laporte Gas & Electric Co.*, P.U.R. 1921A, 824, (Ind.). $10,000 value on abandoned property set aside unless company can show that its depreciation allowance was not sufficient. *Re Molalla Electric Co.*, P.U.R. 1922C, 810 (Ore.). Amount of abandoned property above salvage value was not included in rate base. It was used for World's Fair in St. Louis and should have been amortized out of earnings for that year. *Re United Railway Co.*, P.U.R. 1923D, 759 (Mo.).

[13] Money expended for new paving upon abandonment of street car tracks. plus cost of abandoned track should be charged to reserve for depreciation. If the reserve is not sufficient it should be debited to surplus. *Public Service Commission v. St. Joseph R. L. Heat, Light and Power Co.*, 14 P.U.R. (N'S.) 113, 127 (Mo.). Abandoned small generators not included in rate base. Earnings in past were sufficient to amortize capital invested in them. For the Panama-California International Exposition the utility put in larger generators, thus making the old ones useless. *Re San Diego Consoldated Gas and Electric Co.*, P.U.R. 1917A, 930 (Cal.). Unused and abandoned property is not included in valuation. If reserves for its retirement have not been set up, the stockholder should suffer *Hoffman v. Elmira Water, Light & Railroad Co.*, P.U.R. 1920D, 266 (N.Y.).

penses. The customary method of handling abandoned property is to write it off through the reserve for depreciation if the reserve is sufficient. Missouri, California and New York, however, favor debiting the amount of the abandoned property to surplus, provided the surplus account is large enough, thus the consumer would neither suffer from an increase in the rate base nor from increasing the expenses of the utility.

ACCOUNTING FOR ABANDONED PROPERTY

The accounting methods used in charging off abandoned property by a utility depend upon the system of uniform accounting prescribed by the commission and by the decisions of the commission in interpreting such system when abandonment of property is presented as the point at issue.

There are five possible ways of accounting for abandoned property. First, the full book value may be debited to surplus if no reserve for depreciation has been set up, or the amount in excess of the reserve plus salvage value may be charged to surplus. Second, it may be written off against a reserve which has been built up in the past as deductions from income. Third, it may be charged to present operating expenses. Fourth, it may be set up as a deferred charge and amortized in the future out of income, thus being a burden on future consumers. Fifth, it may be set up as a deferred charge and amortized in the future from surplus, thus placing a burden on the stockholder. Cases in the Public Utility Reports fall into all of the above five classes. Very few of them, however, deal with the problem of valuation of abandoned property, even though the utility may have been asking permission of a public service commission to retire certain property, or to set up a property-abandoned account. Nevertheless, these cases are considered to show how abandoned property is treated from the accountant's point of view.

Charge to Surplus. In only a few cases are the stockholders penalized by debiting the book value of the abandoned property against surplus.[14] The net effect of an entry of this type is merely a correction for a previous error in judgment as to when the useful life of the abandoned asset would expire. Since profits were overstated in the past, the correction should be made against them through the surplus account.

Charge to Reserve. If the accountant makes an accurate estimate of the amount that he should have in his depreciation reserve, all that he need do when property is abandoned is simply to credit the asset account and debit the depreciation reserve account.[15] This is in accord with modern accounting practice.

Charge to Expense. In railway cases the Interstate Commerce Commission authorized railroads to write off abandoned property against the operating expenses for the

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[14] Asset credited, surplus charged. *All America Cables and Radio* (1940 35 P.U.R. (N.S.) 331 (N.Y.); *Re Mountain Fuel Supply Co.* (1940) 33 P.U.R. (N.S.) 3 (Utah). Abandoned section of street railway written off against surplus at book value. *Re Northern States Power Co.*, P.U.R. 1933A, 297 (Wis.). Abandoned small generators were not included in rate base. Since earnings in past were sufficient to amortize capital invested in them they were debited to surplus. *Re San Diego Consolidated Gas & Electric Co.*, P.U.R. 1917A, 930 (Cal.). Abandoned property should be charged against reserve and surplus for the excess. *Re consolidated Gas Co.*, P.U.R. 1919E, 542 (N.J.).

[15] Property built from contributions should be written off against contributions account; the excess should be charged to the reserve for depreciation account. *Re Potomac Electric Power Co.* (1939) 30 P.U.R. (N.S.) 63 (Fed. P.C.). Abandoned property charged to reserve for depreciation. *Re Yonders Electric Light & Power Co.*, 15 P.U.R. (N.S.) 89 (1936) (N.Y.). Company sought to establish a "Property Abandoned" account, but was not authorized by the commission. The company was to charge the abandoned property against the reserve, then against surplus for the excess. *Re Consolidated Gas Co.*, P.U.R. 1919E, 542 (N.J.). Abandoned property should be charged to reserve for depreciation and asset account credited. The commission said that the rate covered depreciation and that the reserve was sufficient to take this debit. *Re Big Spring Electric Co.*, P.U.R. 1927A, 655 (Utah). Abandoned property charged to depreciation reserve. *Re Lansing Fuel & Gas Co.*, P.U.R. 1921D, 387 (Mich.).

year.[16] This can be done for a large concern, where, perhaps, it is not the custom to keep depreciation reserves, because annual replacements would equal the amount set aside in the reserve. But such a method cannot be used in the average utility, because the usual abandonment of property is such a great item that the operating income for one year would be unable to absorb it. However, if abandoned property has a small book value the average utility can write it off among its operating expenses for the year.

Debit to Deferred Charge Account. The most frequent method of accounting for abandoned property is to carry the unamortized amount as a deferred charge to be amortized in the future. This is necessary because in the usual case of abandonment the sum to be charged off is so large that it cannot be debited to operating expenses. Since it cannot be charged against operating expenses it may either be debited to surplus as we have previously noted or amortized over a future period. The theory of debiting such abandoned property to surplus is quite sound, but as a practical matter utilities seldom have the large surpluses that competitive enterprises possess. The utility is not subject to the risks that the competitive enterprise incurs, consequently it does not need as large a surplus for cushioning financial reverses. The average utility capitalizes its losses by charging them to an abandoned property account, then amortizes the abandoned property in the future either by a debit to operating expenses, which places the burden on the consumer,[17] or by debiting surplus and penalizing the stockholder.[18] The majority of cases favor the former position.

Summary. Utilities do not ordinarily have enough surplus to absorb charges for abandoned property at the time of abandonment. But where possible, California, New Jersey, New York, Utah, and Wisconsin permit this procedure. Michigan, New Jersey, New York, and Utah also advocate debiting the abandoned property to a depreciation reserve when such reserve has been accumulated in the past. Only in cases involving railroads has abandoned property been debited directly to operating expenses for the period. However, when we have abandoned property treated as a deferred charge and amortized in the future, we find the cases almost equally divided between those that favor charging the amortization to operating expenses and those debiting it to surplus. In the former group there is California, Idaho, Indiana, Missouri, and New Brunswick. In the latter group there is New Jersey, New York, and Wisconsin.

Of the five ways the accountant can handle abandoned property, three of them will penalize the consumer by being reflected in operating expenses; two will penalize the stockholder by being deductions from surplus. Debiting abandoned property to a depreciation reserve built up in the past, to present operating expenses, or amortizing a deferred asset account

[16] Replacement cost under I.C.C. rulings charged to operating expenses. Replacement cost equals new property minus abandoned property. *Kansas City S.R. Co. v. U.S.*, 231 U.S. 423 (1913). Electric Railway standard accounts provide for charging off to operating expenses abandonments "directly in connection with improvements." *Re St. Joseph R. Light. Heat & Power Co.*, (1934) 5 P.U.R. (N.S.) 253 (Mo.).

[17] *Fredericton v Maritime Electric Co.*, 6 P.U.R. (N.S.) 157 (1934) (N.B.); *Re Coast Counties Gas & Electric Co.*, P.U.R. 1931B, 105, 107 (Cal.); *Re Pacific Gas & Electric Co.*, 1 P.U.R. (N.S.) 1 (1933) (Cal.); *Re St. Joseph R. Light, Heat & Power Co.*, 5 P.U.R. (N.S.) 253 (1934) (Mo.); *Re Laporte Gas & Electric Co.*, P.U.R. 1921A, 824 (Ind.); *Taylor v. Northwest Light & Water Co.*, P.U.R. 1916A, 372 (Idaho).

[18] Busses substituted for street cars. Abandoned property put in abandoned property account to be written off in future against surplus. *Re Eastern N. J. Power Co.*, P.U.R. 1930A, 419 (N.J.). Unused and abandoned property is not included in valuation. If reserves for its retirement have not been set up, the stockholder should suffer. *Hoffman v. Elmira Water, Light & Railroad Co.*, P.U.R. 1920D, 266 (N.Y.). Excess above scrap put in abandoned property account; amortized against surplus in future. *Re Wisconsin Power & Light Co.*, P.U.R. 1931C, 289 (Wis.).

through operating expenses in the future are instances where abandoned property, although not included in the rate base, can, nevertheless, force the consumer to pay a higher rate by being charged increased cost of service. If abandoned property is debited directly to surplus at the time of abandonment or amortized in the future against surplus, the investor takes the loss, not the consumer.

Uniform Accounting Systems. The states in prescribing accounting systems to be used by the utilities under their jurisdiction fall into four categories: (1) Those commissions that prescribe no uniform system; (2) those commissions that advocate the system used by the Federal Power Commission; (3) those commissions that follow the 1922 system authorized by the National Association of Railroad and Utility Commissioners or its revision; and (4) those commissions which prescribe a system of their own.

There are seven states in the union that do not regulate electric utilities; they are Delaware, Iowa, Florida, Louisiana, Minnesota, and South Dakota. Nebraska has only rural regulation of the electric industry and Texas regulates only the gas industry. Texas reports that most of the companies in the state use the uniform system of accounts prescribed by the Federal Power Commission. New Mexico possesses a new Public Service Commission, created on July 15, 1941. To the writer's present knowledge this new commission has not promulgated any uniform system of accounts; preliminary information indicates, however, that it, too, leans toward the adoption of the system devised by the Federal Power Commission.

Eleven states follow the system prescribed by the Federal Power Commission: California, Connecticut, Indiana, Idaho, Kansas, Maryland, Michigan, Missouri, North Carolina, Pennsylvania, and West Virginia. Under the Federal Power Commission method of handling abandoned property, such property is charged to a deferred charge account, #141, "Extraordinary Property Losses." This charge is then amortized as an operating expense with the permission of the commission through an expense account, #506, "Property Losses Chargeable to Operations. Instructions for the use of these two accounts are as follows:

141. Extraordinary Property Losses.

A. This account shall include, when so authorized or directed by the Commission, losses in service value of property abandoned or otherwise retired from service which are not provided for by the depreciation or other reserves and which could not reasonably have been foreseen and provided for. It shall include also, when so authorized or directed by the Commission, extraordinary losses, such as unforseen damages to property which could not reasonably have been anticipated and which are not covered by reserves or by insurance.

B. The entire loss in service value of depreciable property retired shall be charged to the depreciation reserve. If all, or a portion, of the loss in service value is to be included in this account, the depreciation reserve shall then be credited and this account charged with the amount properly chargeable hereto.

C. This account shall be so maintained that convenient itemization may be made of all amounts included herein.

D. Before making any entries in this account, the utility shall obtain the approval of the Commission. Application for permission to use the account shall be accompanied by a statement or statements giving a complete explanation of the nature and cause of the property loss together with a description of the property, its location, the original cost thereof, classified in accordance with the prescribed electric plant accounts, the cost to the utility, the amount of waterpower value or other intangible value carried in the accounts with respect to such property, the amount at which the property is retired or to be retired, the amount, if any, chargeable to the depreciation or other reserves (showing cost thus chargeable, salvage, and cost of removal), the amount it is proposed to include in this account, the period over which and the accounts to which it is proposed to write off the loss, and a copy of any statement or statements made or planned to be made to a trustee under a mortgage or other indenture with respect to the property.

506. Property Losses Chargeable to Operations.

This account shall be charged with amounts credited to Account 141, Extraordinary Property Losses, when the commission has authorized the amount in the latter account to be amortized by charges to operations.[19]

Ten states follow the systems devised by the National Association of Railroad and Utilities Commissioners. The latest system sanctioned by the NARUC is the same as that advocated by the Federal Power Commission as far as the charging off of abandoned property is concerned. That is, a deferred charge account, #141, is debited, and this account in turn is written off through operations, account #506. New Jersey, Utah, and Wisconsin use this system. Arizona, Oklahoma, and Tennessee use the 1922 system or modifications thereof. Under the method prescribed by the National Association of Railway and Utilities Commissioners in their Uniform Classification of Accounts for Electrical Utilities adopted in 1922, abandoned property was debited to account #132, a deferred charge. Its use is described as follows:

132. Property Abandoned.

This account is intended as a suspense account which shall include the retirement loss (i.e., the original cost, estimated if not known, plus cost of dismantling, less salvage) on property destroyed or abandoned because of replacement, of obsolescence of an extraordinary casualty, or for any other reason, when such loss has not been provided for in advance through a reserve. Amounts thus charged should be amortized through annual or more frequent charges over a definitely determined period to such accounts as shall be proper.[20]

This method is not clear as to how the deferred charge will be written off. No specific account is provided as under the Federal Power Commission system, but the abandoned property shall be amortized by annual charges to such accounts as are deemed proper. Other states using the NARUC system or modifications thereof are Arkansas, Colorado, Georgia, North Dakota, and Washington.

Three states, Maine, Montana, and New Hampshire use systems of uniform accounting patterned upon both the Federal Power Commission's method and the method advocated in 1922 by the NARUC. In Maine a deferred charge account, #132,[21] is debited when authorized by the commission. This account although bearing the account number of the 1922 NARUC classification contains a description similar to that under the Federal Power Commission system. It is amortized against operating income through account #401E.[22] Montana provides no account numbers in its classification, but merely a list of account titles and descriptions of their uses. For extraordinary casualties a deferred charge account, "Extraordinary Casualties Suspense Account," is charged and is then transferred in part each month to an expense account, "Contingencies (Extraordinary)." New Hampshire follows

[19] Uniform System of Accounts prescribed for Public Utilities and Licensees, Effective January 1, 1937; Federal Power Commission; United States Government Printing Office, Washington D. C.

[20] Uniform Classification of Accounts for Electrical Utilities; National Association of Railway and Utilities Commissioners; 1922; State Law Reporting Company, New York, N. Y.

[21] "*132 Extraordinary Property Losses.* This account shall include, when so authorized or directed by the Commission, losses in service value of property abandoned or otherwise retired from service which are not provided for by the depreciation or other reserves and which could not reasonably have been foreseen and provided for. It shall include also, when so authorized or directed by the Commission, extraordinary losses, such as unforeseen damages to property which could not reasonably have been anticipated and which are not covered by reserves or by insurance.

"The entire loss in service value of depreciable property retired shall be charged to the depreciation reserve. If all, or a portion, of the loss in service value is to be included in this account, the depreciation reserve shall then be credited and this account charged with the amount properly chargeable hereto.

"This account shall be so maintained that convenient itemization may be made of all amounts included herein. (See account 401E.)"

[22] "*E. Deferred Retirement Losses.* This account shall include the portion of the unamortized loss on electric or general operating property retired which the utility charges hereto each month with concurrent credits to account 132, Extraordinary Property Losses. (See instruction 23-D.)"

the accounting numbers of the Federal Power Commission and numbers its deferred charge account #141. However, the description and use of the account are fashioned upon the 1922 system of the NARUC,[28] for no account is designated through which to amortize this deferred charge, but the writing off of the abandoned property is within the discretion of the commission.

The above survey of the uniform accounting systems adopted by the state commissions indicates that all of them treat abandoned property as a deferred charge when there is no reserve sufficiently large to absorb the charge; a majority of them advocate writing such suspense accounts off through operating expenses, and a minority, following the 1922 system of the NARUC, leave the decision as to the method of absorbing the deferred charge to the commissions or individual accountants. Therefore, under this older system there is a possibility that the abandoned property may be written off either as a charge to operations or as a debit to surplus. The modern tendency under the uniform systems of accounting is to penalize the consumer, rather than the stockholder when property is no longer used nor useful.

CONCLUSIONS

The previous analysis of the cases discloses that the great majority of commissions will not include abandoned property in the rate base for valuation purposes. The commissions of California, Idaho, and Indiana, however, include the amortization of abandoned property in the operating expenses of the utility, but exclude such property from the rate base. By increasing the expenses of the utility these states penalize the consumer to the same degree as the states that include the abandoned property in the rate base. However, New Brunswick goes one step further in penalizing the consumer by advocating the inclusion of the abandoned property in the rate base *and* its amortization through operating expenses. Since all of the states seem to agree that abandoned property must ultimately be amortized against revenues, whether or not it is included in the valuation for rate purposes, the crux of the entire problem from the consumer's point of view is not whether he is made to pay the increased rate through an increased rate base, rate of return, or operating expenses, but whether he or the stockholder is going to pay for the abandoned property. Wisconsin, New York, New Jersey, and California commissions would make the stockholder bear the brunt of losses through abandoned property by debits to surplus.

The cases indicate that in modern rate determination expenses are a larger factor in determining the ultimate charge to the consumer than the value of the property included in the rate base. Therefore, would it not be more simple to estimate the net earnings that a utility should have by subtracting the estimated expenses from the estimated income. The probable expenses for a utility could be ascertained from its records, which should be in accordance with rules laid down by the commission. The commission would then only have to keep its eye fixed on the expenses of the utility, and not have to befuddle itself with an approved rate of return and rate base. There would be no problem of including used and useful property at original cost or reproduction cost, but simply a determination of how much the property

[28] "*141. Property Abandoned.* This account is intended to be used, with the consent of the Commission, as a suspense account which shall include the retirement loss (i.e., book cost, estimated if not known, plus cost of dismantling, less salvage) on property destroyed or abandoned because of replacement, of obsolescence, of an extraordinary casualty, or for any other reason, when such loss has not been provided for in advance through a reserve. Amounts thus charged should be amortized though annual or more frequent charges over a definitely determined period to such accounts as shall be prescribed by the Commission."

should be depreciated each year from its book value, which in accepted accounting practice is original cost. Thus, the commission could direct its inquiry and focus its attention on the one important aspect of the problem, expenses, and not become lost in a maze of overemphasized conjectures which have tended to nullify one another.

Since the utility is chiefly interested in obtaining a sufficient return to enable it to pay its operating expenses and the prevailing dividend rate on its common stock as well as maintaining a surplus deemed prudent by such enterprises, such factors should be weighed directly by the commission in fixing the net earnings and not indirectly as at present. The capital structure is already regulated by the Securities Exchange Commission and by local utility commissions. Therefore, in ascertaining a fair return, the commission would only have to see that all of the operating expenses were legitimate, and authorize a rate sufficient to give an income in excess of operating expenses, large enough—over a period of time—to keep capital in the industry. This would be the lower limit to the rate, a compensatory return. The upper limit would be the limitation of reasonableness—that

> ... What the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth.[24]

[24] *Smyth v. Ames*, 169 U. S. 466, 547, 1898.

ACCOUNTING STATEMENTS FOR PUBLICATION

Herbert E. Miller

The following comments refer to certain matters in the presentation of published accounting statements for the typical going concern. Through this restriction the topic can be narrowed to exclude special accounting problems, such as reorganizations, and the accounting statements of unique businesses, such as brokerage firms. In other words, the generalizations that may be forthcoming are restricted to the usual published statements of industrial, public utility, or trading firms.

The fact that accounting statements prepared for publication have important functions and obligations need not be recited here. It probably is conceded that published statements should permit a variety of sound uses by the many groups (owners, creditors, management, employees, government, and the general public) who rightly are entitled to adequate, unambiguous disclosure. Furthermore, it seems reasonable to suggest that excellence in statement presentation is coordinate with the conception of a business enterprise, to paraphrase Mr. Paton,[1] as a continuing stream of activity rather than a series of positions, with the primary task of the accountant being the preparation of reports on the course of this stream, in appropriate time sections.

If it is acceptable that accountants should report the course of this continuing stream of activity, then it seems reasonable to seek the development of techniques through which more adequate information may be communicated to the increasingly statement-conscious public. Associated with this development is the important, continuing public-relations task, nicely stated by Mr. Arthur Andersen as "the

[1] See Paton, *Recent and Prospective Developments in Accounting Theory*, p. 1.

problem of educating the public as to the meaning and fundamental limitations of accounting statements."[2] This second task seems necessary, for it appears that some statement users have a mistaken conception of what is presented by published accounting statements. One would gather from the unqualified reliance of these individuals on published statements, that their impressions of accounting accomplishments are somewhat idealistic. Accounting statements in fact do not attain so ideal a level.[3] And although accountants have long recognized that financial statements have certain definite limitations, to quote Mr. M. B. Daniels, "events of recent years have shown that the general public and even many bankers, lawyers, and financial analysts have been aware of these limitations in only a vague fashion."[4]

In view of this, it seems reasonable to inquire whether some improvement might not evolve from an elaboration, or expansion, of certain items or sections usually presented in published statements. Such a process principally would involve the incorporation of reasonably detailed supporting schedules into published statements. In other words, without disturbing underlying accounting standards or principles, significant progress might develop through a more complete presentation of the accounting material collected or obtainable from presently used accounting and auditing procedures.

In order to clarify this point of view, several techniques relating to statement presentation will be submitted in brief. The depreciation item will be used for the first suggested elaboration.

It probably is conceded that depreciation entries should be interpreted as reasonable estimates—nothing more. But granting this, the all-inclusive nature of those items suggests that significant factors may be merged or smothered within a single figure. No distinction appears which would convey to the statement user the various degrees of estimation or objective support often hidden within a composite depreciation charge. It seems quite likely that within a depreciation program various degrees of approximation are often attained due to the fact that different assets offer different problems in the measurement of depreciation. Some assets may be short-lived and hence require replacement at such brief intervals that their use life can be accurately estimated. In addition, for the short-lived group, obsolescence seldom becomes a significant problem. In this connection I should like to quote George O. May, "Technological progress is not likely to affect materially the replacement cost of the units with short lives, nor is it likely to have much effect upon the length of their lives. In the case of long-lived assets its effect may be very considerable in either or both respects."[5] In other words, in any given composite depreciation charge, there is not a single, uniform degree of approximation, but several. Although precision may not be obtainable, it nevertheless might be beneficial if some broad bases were established to evaluate, even though roughly, the various degrees of estimation involved.

If the above is true, perhaps a technique of classifying the depreciation charges according to estimated use-life categories would lend extra enlightenment on the extent of the approximation inherent in depreciation entries. The adoption of such a technique would involve either a supporting schedule or a slight modification

[2] Arthur Andersen, "Present-day Problems Affecting the Presentation and Interpretation of Financial Statements," *Journal of Accountancy* November, 1935, p. 332.

[3] Sanders, Hatfield, and Moore, *A Statement of Accounting Principles*, p. 117: "'He [the accountant] knows as well as any one how many guesses lurk behind the figures to which he has given mathematical exactitude.' (Prof. Nathan Isaacs, in *Harvard Law Review*, Vol. XLVI, No. 5, p. 786.)"

[4] *Financial Statements*, p. 5.

[5] "The Relation of Depreciation Provisions to Replacement," *Journal of Accountancy*, May, 1940.

in the presentation of depreciation on the profit-and-loss statement.[6] The example offered is labelled Exhibit A. It should not be supposed that the arrangement used here is necessarily in final form.

Exhibit A

Estimated Depreciation:	
On Assets thought to have a use life not exceeding three years.[7]	xx
On Assets thought to have a use life not exceeding ten years, but over three.	xx
On assets thought to have a use life not exceeding twenty-five years, but over ten.	xx
On assets thought to have a use life of over twenty-five years.	xx
Total	xxx

It seems possible to justify the illustrated technique on the grounds that such detail would provide a rough test on the extent of and varying degrees of approximation involved in the depreciation entries.[8] In this connection, it might contribute to a more enlightened understanding of depreciation entries by statement users. In addition, however, the presentation of the suggested detail on published statements would facilitate more comprehensive statement uses. This feature might easily be the basis for an entire article. Suffice it to say that for the purpose at hand, such possibilities are merely noted. For example, interest-paying ability might be better ascertained in view of the available gauge of replacement requirements, or it could be discovered to what extent the revenue stream was sufficient to cover depreciation charges on the short-lived or other asset groups and thereby approximate a given firm's general vulnerability.[9]

For instance, suppose a manufacturing firm with a substantial investment in long-lived assets reports an operating loss of $50,000. Suppose further that the reported operating loss is roughly equivalent to the depreciation charge relating to the asset group having a use-life expectancy exceeding ten years. If a $50,000 operating loss were reported by another firm, comparable in every respect except as to fixed-assets composition, the latter firm having a concentration in short-lived assets, the reported losses would not be equivalent in all respects. In general, the using up of short-lived assets implies a near-future financing problem, while the using up of longer-lived assets usually does not call for such an immediately impending outlay. Long-lived assets also seem to offer greater postponement opportunities. It is quite likely, therefore, that the company having the concentration in longer-lived assets may be better able to maintain a reasonably sound financial position during a not-too-extensive business depression. This type of implication is not easily distinguishable if a single depreciation figure is published.

In harmony with this approach, a considerable amount of misunderstanding might be avoided if some technique could be devised which would properly warn

[6] The suggested treatment is not repugnant to proposals that obsolescence should be accrued separately from the effect of physical factors. In fact, each endeavors to clarify the depreciation "lump" but in different senses. See C. A. Moyer, "Should Obsolescence be Separately Accrued?" Accounting Review, June, 1940, p. 25. See also H. F. Taggart, "Accounting for Functional Depreciation," Accounting Review, December, 1940.

[7] Three years was selected because, for statistical purposes, it is sometimes held that assets having a use life expectancy of not more than three years should be treated as nondurable goods. The statistical data possibilities that such a technique would afford are a by-product that perhaps should be kept in mind. Use life here refers to the original or entire use life, not that remaining.

[8] In thinking about this matter it should be noted that a uniform absolute error in years relating to different use life groups will cause a varying degree or percentage of error; e.g. a one-year error on a five-year estimated use-life equals in percentage terms a ten-year error, if in the same direction, on a fifty-year estimated use-life. Even after allowing for this natural "saving" or "minimizing" influence, it is felt that the above comments still may be worth while.

[9] As evidence that such considerations prevail the following quotation from the Annual Report to Stockholders of Northwest Airlines, June 30, 1939, is offered: "Although the year's operations resulted in a net loss, this loss was only about 32% of our depreciation, as a result of which the current position of the company showed considerable improvement."

statement users against the use of a single dollar concept when dealing with accounting statements—particularly the balance sheet. The main function of such a technique should be to reveal to the statement user a clearer picture of actual accounting attainment.

As is generally recognized, some accounts automatically reflect current dollar values. These accounts either are active enough, have a balance of recent origin, or represent a determined money claim so that the account balance has a significance, at a given date, above a simply nominal dollar amount. Other accounts, mainly fixed and intangible assets, have no such natural "up-to-date" characteristics. The balances of these latter accounts, representing in many instances a sort of slow-moving average, should not be expected to convey the same meaning as the former accounts and should not be interpreted as presenting a similar type of dollar connotation.

It seems reasonable to expect that a portion of the misunderstanding attributable to price-level variations might be removed if the statement presentations revealed the approximate dates of significant investments in fixed assets. Perhaps a considerable amount of confusion on this score arises from a deficiency of supplementary supporting schedules. If sufficient detail about certain account balances or classifications were available for the interested statement user, better results might be forthcoming. I offer quotations from Messrs. Paton and Littleton and from Mr. Kohler. "The development of ways and means of reporting supplementary data effectively should be encouraged even though it is agreed that the primary basis of recording and reporting is cost."[10] " . . . the maximum information necessary for interpretative purposes must accompany the balance sheet."[11]

In order to facilitate greater clarity and perhaps combat some misunderstanding, it is suggested that the fixed-assets section should be presented, or supported by schedules, in such a fashion that the following three extremely significant types of detail would be apparent.[12] (1) Gross amount of fixed assets and accompanying reserves, classified by year groups in which the assets were acquired. This detail would provide statement users with appropriate information to evaluate expansion policies. It would also enable interested persons to apply various price level indices according to their fancies or specialized problems. It might also curtail some of the discussion that periodically prevails concerning appraisal purposes. I might add parenthetically that whether or not one has been favorably impressed by arguments urging the recognition of appraisal figures in the accounts, he should be willing to supplement any cost figure with relevant, impartial information. (2) Gross amount of plant and accompanying reserves classified according to use-life age groups (as suggested for profit-and-loss depreciation items). This detail might enable one to gauge in general terms

[10] Paton and Littleton. *Introduction to Corporate Accounting Standards*, p. 126. And again on page 140: "Gains and losses in purchasing power as such are not disclosed by a scheme of accounting which deals only with recorded dollar costs and treats all recorded dollars as homogeneous, and it is not unreasonable to hold that such accounting might be supplemented in some appropriate manner."

[11] E. L. Kohler, "Balance Sheet Standards," *The Certified Public Accountant*, December, 1931, p. 374. But whenever supporting detail is being considered, the following quotation should be kept in mind: "It is an important and inescapable fact, frequently overlooked, that those who prepare balance sheets can never hope to reduce a complex business enterprise to terms simple enough to be comprehended by the layman having no knowledge of finance."

[12] This seems to be in agreement with the second principle of cost developed in the presentation of "Accounting Principles Underlying Corporate Financial Statements" prepared by the Executive Committee of the American Accounting Association. "Costs incurred should be appropriately classified to facilitate tracing and absorption in terms of operating activity and accounting periods. . . ."

present and future replacement needs and also to test to what extent outlays for short-lived assets and outlays for long-lived assets were being recovered. (3) A plant-ledger reconciliation revealing the amount of expenditures on owned assets that have been capitalized, additions and how paid for, and disposals. (Concerning intangible assets, their sources and amortization programs, if any have been adopted, should be revealed.)

In the annual reports of United States Steel Corporation and Great Northern Railway Company a considerable amount of supporting detail is presented. In my opinion, publication of significant supporting detail is a stride forward. Two of the schedules published by United States Steel Corporation are presented in conjunction with a hypothetical illustration revealing the suggested detail on the fixed-assets section, and are labeled Exhibit B.

Exhibit B (Hypothetical)

Schedule 1

FIXED ASSETS SCHEDULED ACCORDING TO ACQUIREMENT

December 31, 1941

	Cost Estimate		*Allowance or Reserve for Depreciation*	*Carrying Value Other Than Land*	*Carrying Value Of Land*
	Other	*Cash*			
Prior 1921	$	$	$	$	$
Land, from preceding firm at book value	50,000				50,000
Building	100,000	70,000	80,000	90,000	
1921–1925					
Buildings, by preferred stock at par	75,000	300,000	150,000	225,000	
1926–1930					
Land, donated and valued by authority of directors	25,000				25,000
Buildings		50,000	20,000	30,000	
Equipment		100,000	45,000	55,000	
1931–1935					
Equipment		20,000	6,000	14,000	
1936–1938					
Equipment		45,000	8,000	37,000	
1939					
Equipment		40,000	3,500	36,500	
Building		175,000	9,000	166,000	
1940					
Equipment		15,000	1,000	14,000	
1941					
Equipment		35,000	1,000	34,000	
Totals	$250,000	$850,000	$323,500	$701,500	$75,000

Exhibit B (Hypothetical)

Schedule 2

FIXED ASSETS SCHEDULED ACCORDING TO USE-LIFE ESTIMATES ADOPTED IN DEPRECIATION PROGRAM

Expected Use-Life		*Gross*	*Reserve*	*Carrying Value*	*1941 Depreciation Provision*
Under 3 years	Equipment	$ 90,000	$ 20,000	$ 70,000	$15,000
Between 3–10	Equipment	135,000	17,500	117,500	12,000
Between 10–25	Equipment	70,000	20,000	50,000	2,000
Above 25	Equipment	10,000	7,000	3,000	225
Above 25	Buildings	720,000	259,000	461,000	15,000
	Add Land	75,000		75,000	
		$1,100,000	$323,500	$776,500	$44,225

Exhibit B

Schedule 3 (Hypothetical)

RECONCILIATION OF FIXED ASSETS FOR THE YEAR ENDED DECEMBER 31, 1941

	Land	Buildings		Equipment	
		Cost	*Reserve for Depreciation*	*Cost*	*Reserve for Depreciation*
Balance 12/31/40	$75,000	$720,000	$269,000	$290,000	$53,275
Deduct Improvements (This is not a recommendation that improvements should be charged to the Reserve for Depreciation)			25,000		
Add New Acquirements (Cash)				35,000	
Deduct Disposals				20,000	18,000
Add Depreciation Provision, 1941			15,000		29,225
Balance per Balance Sheet 12/31/41	$75,000	$720,000	$259,000	$305,000	$64,500

Exhibit B

Schedule 4

UNITED STATES STEEL CORPORATION

Detail of Balance Sheet Items

Fixed Assets (000's omitted)

	Gross Investment 12/31/38	*Additions in Year*	*Returns & Sales in Year*	*Reclassifications & Adjustments*	*Gross Investment 12/31/39*
Real Estate	$ 98,564	$ 458	$ 1,598	$830	$ 98,256
Plant, Mineral & Manufacturing*	1,852,201	22,485	22,652	(908)	1,851,126
Transportation R.R., Lake, & Ocean S. S.	367,150	3,118	4,111	176	366,331
Investment in Mine Stripping, etc.	26,402	1,858	5,595	826	23,491
	$2,344,317	$27,919	$33,956	$924	$2,339,204

* Includes dock and river transportation equipment auxiliary to and a part of manufacturing properties.

Schedule 5

Reserves (000's omitted)

DEPLETION, DEPRECIATION, AMORTIZATION, AND OBSOLESCENCE RESERVES

	Balances 12/31/38	*Income Set Aside 1939*	*1939 Expend. & Charges*	*1939 Trans. & Adjust.*	*Balances 12/31/39*
Depletion	$ 9,956	$ 2,566	$ 2,602	$ 30	$ 9,949
Depreciation	958,617	58,094	20,493	19,526	1,015,745
Amortization	178,886			(8,933)	169,953
Blast Furnace Relining	19,916	2,720	1,236		21,400
Sundry Other	10,422			(10,422)	
Total	$1,177,797	$63,380	$24,331	$ 201	$1,217,047

The exact form or arrangement, however, is not so vital for the purpose at hand. The important question is whether the development and adoption of the type of presentations mentioned in these comments would further clarify accounting's accomplishments and provide for a wider variety of statement uses.

COST ANALYSIS FOR ELECTRIC UTILITIES

ROBERT E. WALDEN

1. PURPOSE OF COST ANALYSIS

COST ANALYSIS in electric-utility accounting has been somewhat neglected. The common attitude has been that since there is only one product in most cases, the determination of cost per kilowatt-hour at various points in the generative and distributive process is as far as cost analysis need go. Many of the larger private and municipal utilities, however, have given serious attention to the possibilities of more extensive cost analysis.

In competitive enterprises the basic function of cost analysis has to do with cost control, although other functions are of varying importance in given situations. In a monopolistic enterprise the cost-control aspect is still important, but perhaps the whole relationship between costs and rates is more so. If costs can be broken down according to classes of service or groups of customers such analysis is very useful as a guide in designing the rate structure. Having been so used, continuous cost analysis will help suggest desirable changes in rate structure as cost of rendering service or conditions of demand and consumption change. In unusual cases the costs can be used as a basis for cost-plus sales or other special types of contracts. Furthermore, it follows logically that it is easier to justify before a regulatory body differential rates which have taken cost into consideration.

Expense of cost control is the second major function of cost accounting for an electric utility. In this connection extended discussion seems unnecessary. The accountant should determine (1) what the costs in detail ought to be at different levels of output, and (2) what they actually are. The first of these points is accomplished by the establishment of a "flexible budget," or a set of expense standards for various possible levels of output. Such standards must be set with extreme care and the work demands the coöperation of the entire staff. Having set the standards, the second point is to design records and organize duties so that there is adequate reporting of actual performance. Comparison of results with standards, and analysis of the variances, is the final step in throwing the spot-light on costs.

Since this type of cost analysis is rather well understood and already in wide use, the remainder of this discussion will be devoted to the first of the two above-mentioned major functions of cost analysis for an electric utility.

2. DISTRIBUTION AND ALLOCATION OF COSTS

There is rather general agreement among utility experts that the first step in this type of cost analysis should be a regrouping of the expenses. In the FPC-NARUC[1] systems, the operating expenses are functionalized under the following headings: production, transmission, distribution, customers' accounting and collecting, sales promotion, and administrative and general. Depreciation and taxes have been classified outside the operating expense accounts proper, but they must be

[1] Federal Power Commission, *Uniform System of Accounts*, 1937. U. S. Government Printing office, Washington. 152 p.

National Association of Railroad and Utilities Commissioners, *Uniform System of Accounts for Electric Utilities*, 1937. State Law Reporting Co., New York. 213 p.

included in a cost analysis. The first step, then, is the ***distribution*** of these expenses to three main classes (capacity costs, energy costs, and customer costs), before attempting *allocation* to customers or groups of customers.

a. *Capacity Costs*

In the first main class would be placed capacity, or demand, or fixed costs—i.e., those costs which are relatively independent of the amount of electricity produced. In apportioning expenses to this group, a going concern is assumed. Admittedly there are some expenses which would not be incurred in the event of a continued shut-down. But if customers are being served, these same expenses must be met and they go on with little dependence on the actual output. In an electric plant these fixed costs are a very considerable portion of the total costs. The productive process is a highly mechanized one in which there is heavy plant investment and much labor of the type that is "on the job" whether all or only a few of the turbines are running.

Among the plant expense accounts the following would ordinarily be classed as capacity costs: depreciation, property taxes, supervision, and maintenance.[2] According to some authorities[3] a portion of the station labor, fuel, and supplies should also be considered as capacity costs. The justification is on the grounds that readiness to serve depends on more than mere capacity. Interest on plant capital investment might also be included in the cost analysis, in case rates are being established to cover an assumed return on capital.

Of the administrative and general expenses, a considerable portion could properly be classed with the fixed or readiness-to-serve costs.

In distributing the various expenses mentioned to the capacity cost group, use should be made of a flexible budget. The estimates of the detail of expenses at various levels of output would be studied to show which items were fixed and semi-fixed, and which could be more properly classed as variable—i.e., dependent either on output or on number of customers served. Certain items—maintenance, for example—might have to be apportioned arbitrarily between capacity and energy costs because of their semi-fixed or semi-variable characteristics.

b. ***Energy Costs***

The second main class of costs consists of energy costs. These costs are in general proportionate to the volume of output, and include therefore station and line labor (other than maintenance and supervision), fuel, water, supplies, and purchased energy.[4] When using the cost figures in designing a rate system, the energy cost would be the basis for an energy charge designed to compensate for the actual cost of producing and delivering current, over and above the readiness-to-serve cost.

c. ***Customer Costs***

The third main class of costs will be made up of customer costs. They include the costs of maintaining an account with the customer, reading meters, billing, making and recording collections, bad debts losses, and such portion of the administrative and general expenses as can logically be distributed to this class. All but the last of these items makes up the customers' accounting and collecting expense group in the classification of operating expenses usually encountered. The total in this class can be allocated on the basis of the number of customers or num-

[2] Maintenance is proably semi-fixed; see below.

[3] E.g., H. W. Hills in "Demand Costs and Their Allocations," *Electrical World*, January 22, 1927, pp. 198–203.

[4] Part of purchased energy would be apportioned to capacity cost if a step or block rate contract with the producer were in effect.

ber of meters and could constitute the basis for a customer charge in the rate schedules.

d. *Other Costs*

The previous discussion has not disposed of all of the administrative and general expenses, nor of the sales promotion expenses.[5] Most of the former can be distributed, as suggested, to capacity or to customer costs. Any which remain, along with sales promotion expense, do not relate logically to any one of the three main classes. Rather than force them arbitrarily into one of these classes, they could be left undistributed and unallocated. These residual items then would have to be covered as part of the gross margin between the various rates established and the costs which this analysis will yield.

In making the distinction between capacity and energy costs, no separate treatment was suggested for transmission and distribution expenses. In the average case this should not be necessary. In unusual situations, however, it might be desirable to allocate at least a portion of the fixed transmission or distribution expense, or both, to a customer or groups of customers requiring special types or extensions of line. It must be remembered that one object of this cost allocation is to arrive at an equitable statement of costs for each customer or each homogeneous group of customers. Whenever special conditions prevail one must not hesitate to give them whatever specific treatment seems reasonable.

3. ALLOCATION OF CAPACITY COSTS

Whereas energy costs are allocated to customers on a consumption basis, and customer costs on a per-customer or per-meter basis, the determination of the basis for the allocation of capacity costs to customers or groups is the real problem of cost analysis for an electric utility.

It is a commonplace in cost accounting that the allocation of fixed costs must always involve some arbitrary procedure which seems to be the most equitable. The whole phenomenon of joint costs presents a problem for which there is no positive or definite solution. There is no criterion for determining the one correct solution. This basic point is overlooked by a number who have written on this subject. One encounters, for example, this statement: "Capacity costs can be definitely and indisputably assigned with the same degree of accuracy as appertains to meter records."[6] If this reference were to arithmetical accuracy only, the point would be conceded; but the context indicated that Greene has in mind the existence of a single definitely accurate method of allocation.

The literature on allocation of capacity costs reveals almost as many methods as there are writers who are willing to undertake the discussion of the subject. The aim of the following paragraphs will be to describe briefly the various methods encountered and finally to present their favorable and unfavorable aspects.

a. *The Peak Responsibility Method*

Peak responsibility is the basis for one method of capacity cost allocation. Since in an electric utility the productive capacity required is that necessary to take care of the peak load[7] (with a reasonable margin of safety), it is a simple matter to reason that those customers who demand service at the time of the peak should bear the capacity costs in proportion to their respective demands at that time. They are the customers who are responsible for the

[5] This class does not include selling costs which relate to merchandise or appliance sales.

[6] W. J. Greene, "Allocating Capacity Costs," *Electrical World*, May 29, 1926, pp. 1190–1193.

[7] Peak load: Maximum current demanded at any one moment.

peak and the advocates of the method hold that such customers should bear the costs of providing and maintaining the necessary capacity.

b. *Eisenmenger's Method*[8]

Eisenmenger's principle of allocation is that a customer's cost is influenced by his peak responsibility, but also by his demand at all other times. As a result, he holds that "the customer's demand cost is an intricate function of the entire station load curve and of the entire load curve of the customer in question. The 'equivalent demand,' instead of being simply proportional to peak responsibility, is a true integral extending over all elements of time over which the load curves extend." The method gives results which are not the same as those of the peak responsibility method, yet it uses peak responsibility as the basis of its calculation and must be classified with the many methods which are modifications of the peak responsibility principle.

c. *Quinan's Cost Responsibility Method*[9]

The cost responsibility method is another which gives considerable importance to the demand at the time of the station peak. The calculation involves first an analysis of the system load curve to construct an index of the relative costs of using the various units of productive capacity when the factor of amount of use is included. For example, the fixed costs on the productive unit which needs to be brought in only at the time of peak demand will total the same as the fixed costs on a unit of comparable size which is used to carry the base load, but the cost of using the former unit *per hour of use* is much greater because of the relatively slight use. After the relative cost index is prepared, the next step involves application of the pertinent factors of the index to the hourly ordinates of the load curve of each customer; this multiplication yields a modified curve whose area (i.e., the area under the curve) is directly proportional to the total capacity cost. The final step is the translation of this proportional cost into monetary units.

Just as the summation of individual load curves results in the system load curve, so also does a summation of the modified curves yield the equivalent of a 100 per cent load factor[10] curve. The contribution of the method lies in the fact that each customer's load curve is modified in a distinct way according to the relative amounts of on-peak, near-peak, and off-peak demand.

d. *Hills' "Phantom Customer" Method*[11]

The so-called phantom customer method is based on the following premise: If the system load factor were 100 per cent, allocation of demand costs on a kilowatt hour basis would be equitable. Therefore, a 100 per cent load factor is assumed for any given situation by adding a "phantom customer" to make up the difference between the actual load factor and 100 per cent. Total fixed charges are then apportioned to all customers, including the phantom, on a kilowatt hour basis. Finally, the phantom customer's charge is reapportioned to those customers who contribute to the peak load on the basis of the ratios of their respective "excess demands on peak" (i.e., demand at time of system peak minus average demand) to the sum

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[8] H. E. Eisenmenger is the author of a treatise on "Central Station Rates in Theory and Practice" which appeared weekly in the *Electrical Review* (*U.S.*), Vol. 75, from July 5, 1919, through December 27, 1919. The discussion of his method presented here is taken from the sections on "Apportionment of Demand Costs to the Customers."

[9] G. E. Quinan, "Apportioning Power Cost and Various Classes of Consumers," *Electrical World*, June 25, 1921, pp. 1495 ff.

[10] Load Factor: Percentage of actual output to possible output.

[11] H. W. Hills, "Demand Costs and Their Allocation," *Electrical World*, January 22, 1927, pp. 198–203; January 29, 1927, pp. 249–252.

of the excess demands on peak. Thus only those customers whose demand at the time of the station peak exceeds their average demand will bear any of the phantom customer's share of the fixed costs. All the others will be charged on a consumption or average demand basis.

e. *Greene's Methods*[12]

These two methods, although involving in part different methods of calculation, yield identical results and may be discussed together. One of the two, called the used and unused capacity method, employs consumption and the excess of maximum demand over average hourly load for each customer or class as the basis for its allocation. The other method, termed the consumption and demand method, allocates used period capacity[13] on the basis of consumption, and unused period capacity in the ratios of individual maximum demands to the sum of these maximum demands.[14] It might be pointed out that the phantom customer method also allocates used period capacity in proportion to consumption, but allocates unused period capacity in proportion to excess peak responsibilities. For a comparison see Table I, below.

f. *Reed's Weighted Peak Method*[15]

The weighted peak method suggested by Reed is an effort to get away from what he believes to be the allocation of too large a portion of the costs to the off-peak customer. A weighted peak is calculated for each customer as follows:

the demand of that customer at the time of the system peak plus

$$\frac{\text{system demand at time of customer's maximum demand}}{\text{system peak demand}}$$

times the excess of the customer's maximum demand over the customer's demand at the time of the system peak.

The total capacity costs are allocated to each customer according to the ratios of the weighted peaks (as calculated above) to the total of the weighted peaks. It will be observed that this method, although a modification of the peak responsibility

[12] W. J. Greene, "Allocating Capacity Costs," *Electrical World*, May 29, 1926, pp. 1190–1193. C. F. Schoonmaker and C. B. Gorton have collaborated with Greene in some of his work.

[13] Period capacity: Possible output over a given period of time. Used period capacity is therefore actual output over that period.

[14] The solution for either method involves a pair of simultaneous equations with so many variables that it is deemed inadvisable to reproduce them here. Any interested reader is referred to the listed references, and is referred further to articles by Arthur H. Ford in the *Electrical World* for September 10, 1927, and November 5, 1927, pp. 521 and 943 respectively, in which two different general solutions are offered.

[15] Chas. S. Reed, "Veal, Hide, and By-Products," *Electrical World*, August 27, 1927, pp. 402–407.

TABLE I

CAPACITY COST ALLOCATION METHODS APPLIED TO PLANT IN CHART I

DATA					RESULTS							
Customer	Peak Demand KW	Max. Demand KW	Annual Consumption KWH	Load Factor %	Peak Resp.	Quinan Cost Resp.	Hills Phant. Customer	Greene (two methods)	Reed Wtd. Peak	Oram & Robison Complete Peak	Demand	Consumption
A	10	10	14,600	16.7	$1200	$610	$888	$580	$820	$712	$686	$369
B	8	8	26,280	37.5	960	733	772	587	656	772	548	665
C	2	2	17,520	100.	240	367	240	240	164	240	137	443
D	0	5	21,900	50.	0	333	300	413	185	300	343	554
E	0	10	14,600	16.7	0	357	200	580	575	376	686	369
	20	35	94,900	54.2	$2400	$2400	$2400	$2400	$2400	$2400	$2400	$2400

method, does allocate some capacity cost to the off-peak customer.

g. *Oram and Robison's Complete Peak Method*[16]

The complete peak method is another modification of the peak responsibility method along the lines of broadening the concept of the "peak" to include all times when the system load is above the average. Used period capacity is allocated according to consumption or average demand. Unused period capacity (the phantom customer of Hills) is allotted to the customers who demand current through the time when the load exceeds the average, in proportion to their excess demands over their average demands during each interval of the complete peak.

The method results in allocating the greatest cost to the on-peak, low load factor customer and the smallest cost to the off-peak, high load factor customer. It allocates only the amount of capacity used to 100 per cent load factor customers regardless of their on-peak status.

h. *The Demand Method*

Another possible basis for allocation of capacity costs is in proportion to the maximum demands of the various customers. Once the maximum demand of each customer is determined, either by actual measurement or by estimate, it is a simple calculation to divide the total capacity costs by the sum of the maximum demands to get the cost per kilowatt of demand. The result is that each customer is charged in proportion to the greatest amount of capacity which he ever demands, regardless of whether the time of such maximum demand is on-peak or off-peak.

When the system diversity factor[17] is greater than unity, the demand method cost per kilowatt will be smaller than would be the cost per kilowatt of peak responsibility under that method. Of course, if the diversity factor were unity, meaning no diversity, the maximum demands would all arise at the same time and both methods would yield the same results.

i. *The Consumption Method*

A discussion of methods of allocating capacity costs would not be complete without a mention of the consumption method. It involves merely using the consumption in terms of kilowatt hours as the base for prorating the capacity cost. If this method were used, the capacity costs and energy costs might be lumped together, since both would be apportioned on the basis of energy consumed.

4. EVALUATION OF THE VARIOUS METHODS OF ALLOCATING CAPACITY COSTS

In general the reason for so many methods having been suggested is that the accountants and engineers who cope with the problem realize the extremes of the simpler methods and are trying to effect an equitable compromise. On the one hand there is the peak responsibility method, which allocates no capacity costs whatever to those users not on at the time of the system peak. At the other extreme lies the consumption method. It almost disregards the customer whose total consumption may be slight, yet who demands a large amount of current at the moment of the station peak. Chart I and Table I, below, represent respectively a hypothetical load diagram for a station with five customers, and a comparison of the total capacity costs which would be allocated to each of these customers under several of the methods which have been discussed. This illustration will be referred to frequently in connection with the following paragraphs.

The peak responsibility method in its unmodified form has few supporters. It is particularly undesirable in diversified serv-

[16] John Oram and H. H. Robison, "The Complete Peak Method," *Electrical World*, August 25, 1928, pp. 359–361.

[17] Diversity factor: Ratio of the sum of the maximum demands of all customers to the maximum coincident demand.

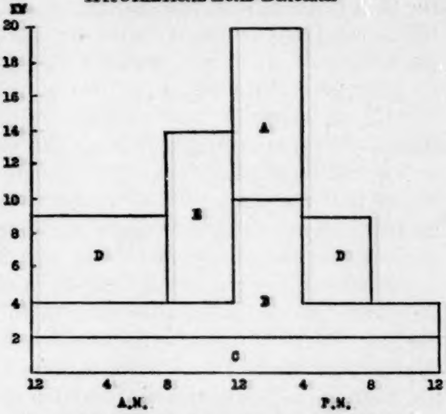
ice, when the peaks are likely to shift; it has been the experience of many plants that "yesterday's peak becomes tomorrow's base load."[18] The facts that it allocates none of the cost to off-peak customers and charges heavily those on-peak are also weaknesses.

Eisenmenger's method can be ruled out for practical use on account of the complexity of calculation. In addition, one distinct weakness is that under it a 100 per cent load factor customer might be charged with more than his maximum demand.[19] As a theoretical contribution to the literature of the subject, however, Eisenmenger's work is worthy of study.

Several of the remaining methods have strong similarities. Quinan's cost responsibility method, the two Greene methods, Hills' phantom customer method, and Oram and Robison's complete peak method all allocate used period capacity on the basis of consumption or average demand. It is in the allocation of the unused period capacity that the methods differ. It is obvious that for these methods, the lower the load factor of the system, the smaller the portion allocated according to consumption and the larger the portion allocated in the manner peculiar to each method. In the illustration the system load factor is 54.2 per cent; among these five methods there is a range from $560 to $888 in the cost allocated to customer A, a range of $240 to $414 for C, and a range of $200 to $580 for E. The range for customers B and D is relatively narrower. It may be noted that under Hills' method all of the unused capacity is allocated to A and B; under the Oram and Robison method a part of that charged to A by Hills is allotted to E (who is on the "complete peak"), and the charges to B, C and D are the same. The two Greene methods, which abandon peak responsibility entirely, allot as much to E, off-peak, as to A, on-peak, since both have the same maximum demand and consumption. D, also off-peak, is given a heavier charge by Greene than by any other of these five methods. The Quinan method allocates part of the unused capacity to C. Since C is a 100 per cent load factor customer, he should be charged only for his actual demand. This method also gives the lowest charge (of the five) to A.

CHART I

HYPOTHETICAL LOAD DIAGRAM*



Assumed total annual capacity costs, $2,400.
System Diversity Factor, 1.75 to 1.
System Load Factor, 54.2%.
Customer characteristics:
A. On-peak, low load factor, high potential diversity.
B. On-peak, fair load factor, high potential diversity.
C. On-peak, 100% load factor, no potential diversity
D. Controlled off-peak, fair load factor.
E. Off-peak, low load factor, high potential diversity.

* Adapted from Chas. S. Reed, *op. cit.*

Reed's weighted peak method yields charges of $82 per kilowatt of maximum demand to A, B, and C, all on-peak, and $37 and $57.50 per kilowatt to D and E, both off-peak. A, because he has higher potential diversity than B, should bear a smaller demand charge per kilowatt. C, with no potential diversity, should be charged for all of his demand, or $120 per kilowatt.

The demand basis of capacity cost allocation has been supported as follows:[20] the

[18] A. S. Knight, untitled comment, *Electrical World*, November 26, 1927, p. 1104.

[19] See Hills, *op. cit.*, p. 202.

[20] A. S. Knight, "Peak Responsibility as a Basis for Allocating Fixed Costs," *Electrical World*, March 6, 1926, pp. 495 ff.

demand charge is not affected by shifts in the time of the system peak except as such shifts involve change in total demand. Each class of customers pays for the capacity it uses, and is not dependent on the "loan" of capacity paid for by other classes. Further expressing his opposition to the peak responsibility principle, Knight argues that the proportion of the total demand of any class that happens to be on at peak time is purely fortuitous and is dependent on the relative development of the other classes. In another connection[21] the same writer suggests modicfiation of the demand method by allowance for 100 per cent load factor and restricted hour customers, which the present author incorporates below in his own recommendations.

An important reason for use of the Greene methods is claimed by that author[22] to be the recognition given by his calculation to potential diversity. He argues that the low load factor customer should be allotted a lower demand charge per kilowatt because of the potential diversity. Another writer[23] questions this assumption of an inverse proportion between load factor and diversity factor, claiming that it is unsupported by evidence. To Knight, the Greene methods seem to be an ingenious compromise between the consumption method and the demand method. A further weakness of the Greene methods lies in failure to consider the time of the maximum demands, and thus there is a tendency to overcharge the off-peak customer. It will be observed from Table I that only the consumption method allots more cost to customer D (entirely off-peak) than do the Greene methods.

5. CONCLUSIONS

To the author, the complex problem of capacity cost allocation does not seem capable of reduction to a single formula or method. The following general principles, however, may be applied:

a. Allocate to the 100 per cent load factor customers or classes the cost of the capacity they require. To charge more would be to charge to them unused capacity for which they are in no way responsible; to charge less would be to cause others to bear the costs of capacity used exclusively by this class.
b. The genuine off-peak customer is one who controls or can control his demand so as to remain definitely off-peak.[24] Such a customer will receive rate concessions, and it is suggested that some arbitrary low cost be alcated to him. A possible maximum for this cost is the amount of use on the basis of time and kilowatts of demand. Applied to customer D of the chart, the result would be $300. This could be subject to a further arbitrary reduction coefficient.
c. With the two special groups of customers taken care of, the problem next is to find a method which gives proper recognition to such diverse elements as maximum demand, demand at time of system peak, load factor, potential diversity, and consumption, The final choice lies essentially between an emphasis on demand and an emphasis on peak responsibility. In most cases the demand emphasis seems more equitable, and either the demand method or the Greene consumption and demand method is recommended. If a method emphasizing peak responsibility is applicable, the Oram and Robison complete peak method provides a reasonable modification of this principle.

[21] Knight, *op. cit., Electrical World,* November 26, 1927, p. 1104.

[22] *Op. cit., Electrical World,* September 25, 1926, p. 531.

[23] A. S. Knight, comments, *Electrical World,* July 31, 1926, pp. 224–225.

[24] H. W. Hills, "Cost of Off-Peak Business," *Electrical World,* August 6, 1927, pp. 255–256.

ACCRUED DEPRECIATION AND THE UTILITY RATE BASE IN PENNSYLVANIA

W. Roy Buckwalter

This study covers the regulation of Pennsylvania utilities from the establishment of the Pennsylvania Public Service Commission in 1913 to its replacement by the Pennsylvania Utility Commission in 1937.

The purposes of this paper are (1) to analyze the weight assigned to accrued depreciation by the Pennsylvania Commission in ascertaining the rate base, and the methods used in determining the amount of accrued depreciation, (2) to indicate the extent to which the Pennsylvania Commission and Pennsylvania Courts agreed as to the role of accrued depreciation in setting the rate base, (3) to point out wherein the concepts of the Pennsylvania Commission agreed with and differed from those held by other Commissions and Courts.

ACCRUED DEPRECIATION AS A FACTOR IN ASCERTAINING THE RATE BASE

From its inception the Pennsylvania Commission insisted, in most cases, upon the deduction of accrued depreciation in determining the rate base. A railway company contended in 1919 that, although it was not new, it was giving good service due to the company's policy of renewals and replacements, and therefore no deduction should be made for accrued depreciation in setting the rate base.[1] The fallacy of this contention was indicated by the Commission when it replied that "In our opinion actual physical depreciation has necessarily taken place in some of the units of respondent's property, which depreciation began the instant the units were installed and will end only with their replacement." Similarly in 1920 the Wilkes-Barre Railway Company maintained that no deduction should be made for accrued depreciation. In reply the Commission ruled that "The reproduction cost should be depreciated in determining present value—and it would be neither just nor reasonable to hold that property in use for many years should be replaced by an entirely new plant in ascertaining the value on which the company is entitled to a fair return."[2] The "no-deduction" claim was strongly contended for by a sewerage company in 1935. This utility contended that: "It is an undisputed fact that this utility is functioning in an efficient manner and fulfilling its obligations to render adequate service and therefore it is inconceivable that the age of its component parts is a factor of any importance in the determination of its value; or that its value regardless of the age of its component parts, is anything less than the cost to reproduce the property at the present time."[3] The Commission made a deduction for accrued depreciation using the sinking fund method pointing out that "It is a well established rule, as shown by the decision of the United States Supreme Court, that accrued depreciation must be deducted from a reproduction cost estimate."[4]

The Commission's support of deduction for accrued depreciation wavered considerably in the Philadelphia Rapid Transit

[1] *Moore v. Valley Railways.* 4 P.S.C. 81, 87, 1919.

[2] *Borough of Plymouth v. Wilkes-Barre Railway Co.,* 4 P.S.C. 722, 724, 1920.

[3] *Public Service Commission v. Cheltenham and Abington Sewerage Co.* 14 P.S.C. 77, 1935, respondent's brief, p. 65.

[4] *Ibid.*, p. 86.

case. In discussing accrued depreciation deduction the Commission said: "We are, therefore, faced with the question, which is a favorite one among students of the subject, whether an operating company, in a high state of maintenance and efficiency for operation should be depreciated because the various physical items which go to make up the property are necessarily in various periods of their service life, although retaining to a full degree their original usefulness." "With regard to single items of property not subject to repair and renewal, such for example as a water pipe buried in the ground and which has an assumed service life of a certain number of years, there would necessarily have to be applied depreciation in reaching its current value which in a well managed property would be offset by a renewal or reserve account set up to take care of the situation; but where a composite property is being properly maintained and renewed so as to be kept at all times in a high state of maintenance, a different question arises. No property can be born over night, and in a system such as this one, which it would take many years to reproduce we cannot fairly say on the first day of operation that the property must be drastically depreciated when we ascertain its fair value."[5] The Commission avoided a direct answer to this question by deciding that in this particular case the evidence indicated a "minimum of depreciation" which was more than offset by a "maximum of going concern value."[6]

This "100 per cent efficiency" theory has been advanced by the railroads, gas and electric companies for many years. It has been also referred to as the "railroad view" or the "retirement" method. The proponents of this view maintain that although the life of a particular unit is terminable the composite property of a large utility, if adequately maintained, does not depreciate.[7] Opponents of this view, for example the Interstate Commerce Commission, hold that the facts do not substantiate this contention. Moreover, attention is directed to a long line of United States Supreme Court decisions, starting with the Knoxville Water case in 1909, approving the deduction of accrued depreciation in ascertaining fair value.[8]

The Pennsylvania Commission's support of a deduction for accrued depreciation in the determination of a rate base was reiterated in the valuation of a telephone company in 1928 when the Commission stated that "It adheres to the principle which it has always heretofore followed in considering that reductions should be made for property depreciations in all estimates or findings of value for rate determination."[9]

The cases studied do not indicate that the Pennsylvania Commission subscribed to the view that when the annual depreciation reserve is calculated by the sinking fund method no deduction should be made from cost new for accrued depreciation. Those who support the view that where the sinking fund method of accrual is used no deduction should be made for accrued depreciation contend that the annual depreciation allowance constitutes a separate fund which is invested in property or securities and that this fund increases because of interest earnings. The interest earned is credited to the reserve account. If accrued depreciation is deducted from cost new the interest accumulations will

[5] *City of Philadelphia v. Philadelphia Rapid Transit Co.* 6 P.S.C. 431, 446, 1923.

[6] *Ibid.*, p. 447.

[7] Depreciation Charges of Telephone and Steam Railroad Companies, 118 I.C.C. 295, 302-303, 1926.

[8] Whitten attacks the retirement theory as based on the "specious reasoning that since a utility plant, as a whole, has an indefinite life, without any prospect of coming to an end, it is worth as much old as new, if properly maintained." Whitten, R. H. and Wilcox, D. *Valuation of Public Service Corporations*, Vol. 2, p. 1729, 1928.

[9] *City of Erie v. Mutual Telephone Co.* 9 P.S.C. 3, 1928.

decrease. The Wisconsin Commission has held that since the earnings of the depreciation reserve account are added to the reserve account there is no injustice in figuring the rate of return upon all the property including that built from reinvested reserves, and then provide for a credit of interest to the reserve account based upon the balance of this account. In other words a part of the return earned upon the total property is credited to the reserve account.[10] The District of Columbia Court of Appeals also ruled in 1927 that where the reserve is accumulated on the sinking-fund basis no deduction need be made for accrued depreciation, on the grounds that the sinking-fund maintained by the utility was sufficient to balance the actual depreciation.[11] In 1927 the United States District Court of Idaho held, however, that accrued depreciation should be deducted even where the sinking-fund method was used.[12] In view of the long list of United States Supreme Court decisions which hold that accrued depreciation must be deducted it seems reasonable to conclude that from a legal standpoint accrued depreciation should be deducted irrespective of the method used for ascertaining the reserve.

The Pennsylvania Commission's statement made in 1935, in a case where it determined annual depreciation allowance by the sinking-fund method, that "It is a well established rule as shown by the decisions of the United States Supreme Court, that accrued depreciation must be deducted from a reproduction cost estimate" indicated that the Commission's policy with respect to accrued depreciation where the sinking-fund method of accruals was used was founded on the rule of the United States Supreme Court rather than upon a consideration of the economic aspects of the case.[13] Likewise in answering the contention of a telephone company in 1928 that the reproduction cost new be used for rate making purposes rather than reproduction cost less depreciation the Commission ruled that "It (the Commission) adheres to the principle which it has always heretofore followed in considering that reductions should be made for property depreciations in all estimates or findings of value for rate making."[14]

In the few cases where the original cost figure was accepted by the Commission as the fair value no deduction was made for accrued depreciation. The cash investment of a street railway which had been operating for fifteen years was found by the Commission to be $4,756,791. This figure, without any deduction for depreciation which must have accrued during these fifteen years, was used by the Commission as the basis for computing the rate of return and an annual depreciation allowance of 3 per cent.[15] Original cost of a gas company, organized in 1912, was found to be $85,000. This figure, undepreciated, was used by the Commission in 1922 as the fair value.[16] Moreover in several of the cases where original cost was but one of several factors considered in ascertaining the rate base the Commission seems to have considered the undepreciated, rather than the depreciated, original cost. Neither the respondent, complainant, nor the Commission made any deduction from their respective estimates of original cost for accrued depreciation on a twenty-five year old water company.[17] In valuing a water company in 1926 the Commission set an

[10] *Re Duluth Street Railway Co.* P.U.R. 1923 D, 705, 737–738, 1923.

[11] *Public Utilities Commission of District of Columbia v. Capital Traction Co.* 17 F. (2d) 673, 1927.

[12] *Idaho Power Co. v. Thompson* 19 F (2d) 547, 1927.

[13] *Public Service Commission v. Cheltenham and Abington Sewerage Co.* 14 P.S.C. 76, 86, 1935.

[14] *City of Erie v. Mutual Telephone Co.* 9 P.S.C. 3, 5, 1928.

[15] *Harmony Route Patrons League v. Pittsburgh, Harmony, etc. Railway Co.* 5 P.S.C. 218, 1921.

[16] *Borough of Lehighton v. New Parryville Consolidated Gas Co.* 5 P.S.C. 809, 1922.

[17] *Borough of Newport v. Newport Home Water Co.* 3 P.S.C. 785, 1918.

"undepreciated original cost" of not more than $85,000, but made no mention of the amount or percentage to be deducted for accrued depreciation.[18] Similarly no mention was made of depreciated original cost in valuing a utility in 1927.[19] An exception to the Commission's practice of using the undepreciated original cost figure was found in the Westmoreland Water Company case. The original cost found by the Commission, $1,238,979, was depreciated $185,701, or 15 per cent.[20]

Numerous cases can be cited which hold that accrued depreciation should be deducted from actual or original cost. In the Kansas City Southern case decided by the United States Supreme Court in 1913 it was held that "A more complete depreciation than that which is represented by a part of the original plant that through destruction or obsolescence has actually perished as useful property, it would be difficult to imagine.[21] The Indiana Commission ruled in 1917 that actual cost was not a satisfactory measure of value for rate making if depreciation had been disregarded.[22] In 1921 the New York Commission used original cost of a gas company as the measure of fair value for rate making after deducting from the original cost the reserve for accrued depreciation.[23]

Several cases can be cited however in defense of undepreciated original cost. In numerous cases the Massachusetts Commission had made no deduction for accrued depreciation. This Commission stated in 1918 that it had followed the practice of making no deduction for accrued depreciation in setting rate base unless failure to provide for it resulted from the payment of excessive dividends or from mismanagement.[24] The West Virginia Commission held in valuing a utility on the original cost basis in 1923, that no deduction should be made for accrued depreciation in the case of a well maintained plant unless the amount that the investment had been decreased had been given to the owners.[25]

The decline in the service capacity of physical property is just as operative when original cost is used in fixing the rate base as when reproduction cost is used, therefore there seems to be little justification in using an undepreciated original cost.

In the few Pennsylvania cases where accrued depreciation was deducted from the original cost figure little weight was attached to original cost in arriving at fair value. Thus in valuing a steam heat company in 1925 the Pennsylvania Commission depreciated its original cost estimate of $265,889 by the amount of the reserve account, $18,129, but set the fair value at $370,000 or but $23,000 less than its depreciated reproduction cost estimate.[26] The original cost of a water company, $180,161, was depreciated 13.5 per cent by the Commission, but the depreciated figure, $155,-839, was not the principal measure considered in setting a fair value of $300,000.[27]

ACCRUED DEPRECIATION ON INTANGIBLES

It is generally agreed that lands, rights of way, franchises, going value and working capital do not depreciate. As to the other intangibles there is no such unanimity. In the Des Moines Gas case the United

[18] *Brubaker v. Millersburg Home Water Co.* 8 P.S.C. 193, 1926.
[19] *Shamokin Borough v. Roaring Creek Water Co.* 8 P.S.C. 799, 1927.
[20] *Greensburgh v. Westmoreland Water Co.* 2 P.S.C. 1034, 1917.
[21] *Kansas City Southern Railway Co. v. United States of America,* 231 U.S. 423, 448, 1913.
[22] *Re Indianapolis Water Co.* P.U.R. 1917 E, 556, 612, 1917.
[23] *Re Utica Gas & Electric Co.* P.U.R. 1922 A, 146, 1921.
[24] *Re Springfield Street Railway Co.* P.U.R. 1918 C 515, 547, 1918.
[25] *Meade Coal Co. v. Appalachian Power Co.* P.U.R. 1923 E, 221, 226–227, 1923.
[26] *Casanave v. Overbrook Steam Heat Co.* 7 P.S.C. 397, 1925.
[27] *Hall v. Lehighton Water Supply Co.* 6 P.S.C. 768, 1924.

States Supreme Court did not depreciate land, organization expenses, meters in stock, and working capital.[28] It was stated by the Court in 1922 that "Many items included in the overhead cost of original construction may properly be excluded in calculating the amount of the depreciation annuity."[29] Just one year before, Judge Hutcheson of the United States District Court had ruled in this Galveston Case that such items as organization expense, legal expense, interest during construction, engineering expense, etc." must be discarded in arriving at the annual depreciation allowance."[30] The exclusion of these overheads reduced the annual depreciation allowance from $1,300,000 to $1,000,000. The Interstate Commerce Commission has depreciated such overheads as taxes during construction, legal expenses, organization expenses and legal expenses with the particular account to which they apply.[31] No deduction was made by the California Commission for depreciation of engineering expenses and interest in fixing the present value of railroads in 1913 and 1914.[32] The Ohio Commission held that no deduction for depreciation should be made in the case of preliminary organization expenses, but in the case of overheads connected with the construction of the physical property such as engineering, insurances, taxes and supervision the Commission applied the rate of depreciation assigned to the physical property, 18.2 per cent.[33] In valuing a water company in 1922 the Missouri Commission stated that "It has been the uniform practice of this Commission to depreciate overhead costs."[34] The Michigan Commission believed that overheads not connected with capital accounts should not be depreciated.[35] Accrued depreciation on overheads was estimated by the Oregon Commission only on that portion of the total overheads which were related to physical property.[36]

Examination of the ascertaining of accrued depreciation of intangibles by the Pennsylvania Commission does not show any clearly defined and consistent policy. In an early case the Commission depreciated construction overheads and interest during construction but failed to do so in valuing a street railway some four years later.[37] The reproduction cost of the Wilkes-Barre Railway was determined by the Commission in 1920 by depreciating the tangible property 20 per cent and then adding to the figure the allowance for intangibles.[38] Valuation of the Philadelphia Suburban Gas and Electric Company in 1924 did not provide for deduction of accrued depreciation of intangibles. The Commission depreciated the physical plant and then added the various intangibles. If certain intangibles were included in the figures for physical property this was not revealed by the data shown in the Commission's report.[39] In valuing the Scranton-Spring Brook Water Service Company in 1930 the Commission gave no evidence to show that the intangibles amounting to $10,123,000 had been depreciated. This belief is substantiated by the fact that the Commission's reproduction cost less depreciation estimate, $33,187,571, plus the

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[28] *Des Moines Gas Co. v. Des Moines,* 238 U. S. 153, 161, 1915.

[29] *Galveston Electric Co. v. Galveston,* 258 U. S. 388, 388–399, 1922.

[30] *Galveston Electric Co.* 272 Fed. 147, 169, 1921.

[31] *Texas Midland Railroad, Valuation Docket #2,* 75 I.C.C. 1, 153, 1918.

[32] *Re Lake Tahoe Railway Co.* 2 Cal. R.C.R. 830, 839, 1913; *Re San Diego and Southeastern Railway Co.* 4 Cal. R.C.R. 539, 548, 1914.

[33] *Lima v. Lima Telephone & Telegraph Co.* P.U.R. 1916 E, 670, 675, 1916.

[34] *Re West St. Louis Water and Light Co.* P.U.R. 1922 E, 805, 826, 1922.

[35] *Re Detroit United Railway,* P.U.R. 1923 E, 283, 301, 1923.

[36] *Campbell v. Hood River Gas & Electric Co.* P.U.R. 1915 D, 855, 873, 874, 1915.

[37] *Thayer v. Beaver Valley Water Co.* 2 P.S.C. 430, 1916.

[38] *Plymouth v. Wilkes-Barre Railway Co.* 4 P.S.C. 722, 1920.

[39] *Coatesville Chamber of Commerce v. Philadelphia Suburban Gas and Electric Company,* 6 P.S.C. 316, 1924.

allowance for intangibles gave a figure of $43,310,571, which was less than 1 per cent below the fair value set by the Commision, $43,650,000. Omitting the allowance for working capital, $500,000, and going concern value, $2,600,000, there remains approximately $7,000,000 of intangibles. If the accrued depreciation percentage used in connection with physical property, 4.7 per cent, had been applied to the intangibles, the fair value would have been reduced by $329,000.[40]

Specific intangibles were depreciated by the Pennsylvania Commission in some cases but not in others. In the Westmoreland Water Company case decided in 1917 promotion expenses were depreciated.[41] Similarly in the York Water Case promotion expenses were depreciated.[42] However in the Springfield Consolidated Water case, $918, and the Nokomis Water case, 1930, promotion and organization expenses were not depreciated.[43] Nor was any deduction for accrued depreciation of organization expense made in the Cheltenham and Abington Sewerage case.[44] In valuing the Lehigh Water Company, 1935, the Commission did not depreciate organization and promotion expense.[45]

In some cases the same percentage was applied to physical and intangible items while in others there was some difference in the rate used. The engineering conference in the Scranton Railway Case, 1921, did not depreciate physical and intangible items separately, but obtained a total figure which it depreciated.[45a] This method was approved by the Commission. The same method was followed by the Commission in the Chambersburg Gas case, 1932. To a reproduction cost new of $465,598, which included about $74,000 in intangibles, the Commission applied an overall rate of 14 per cent for accrued depreciation.[46] However, in the Ben Avon Case intangibles were depreciated 8.7 per cent as compared with 9.6 per cent for intangibles.[47] Intangibles were depreciated 7 per cent and physical property 9 per cent in the York Water Case.[48] In the Overbrook Steam Heat case, 1925, the intangibles were depreciated 20.6 per cent, and physical property 24.2 per cent.[49] Intangibles and physical property were depreciated 12.3 per cent and 14.7 per cent respectively in the Clark's Summit Water case, 1926.[50] In valuing a water company in 1930 the percentage applied by the Commission to intangibles and physical items varied considerably, being 28 per cent and 34.1 per cent respectively.[51]

Although the Pennsylvania Commission did not rigidly pursue a fixed procedure as to what intangibles should and should not be depreciated, a review of the decisions indicates that this body leaned toward the above described view of the Ohio, Michigan and Oregon Commissions that unless the overhead were directly connected with physical property, and therefore would have to be incurred if the property were reproduced, there should be no deduction for accrued depreciation. The Pennsylvania Commission's inclination toward this line of thought is shown by the fact that engineering expenses, contingencies and interest during construction, which were

[40] *Scranton v. Scranton-Spring Brook Water Service Co.* 10 P.S.C. 609, 1930.
[41] *Greensburg v. Westmoreland Water Co.* 2 P.S.C. 1034, 1917.
[42] *City of York v. The York Water Co.* 6 P.S.C. 666, 1924.
[43] *Callaghan v. Springfield Consolidated Water Co.* 3 P.S.C. 399, 1918; *Walter v. Nokomis Water Co.* 10 P.S.C. 453, 1930.
[44] *Public Service Commission v. Cheltenham and Abington Sewerage Co.* 14 P.S.C. 76, 1935.
[45] *Taxpayers Association of Easton v. Lehigh Water Co.* 14 P.S.C., 1935.
[45a] *Allied Printing Trades Council v. Scranton Railway Co.* 5 P.S.C. 180, 1921.
[46] *Chambersburg v. Chambersburg Gas Co.* 11 P.S.C. 583, 1932.
[47] *Ben Avon v. Ohio Valley Water Co.* 2 P.S.C. 969, 1917.
[48] *City of York v. York Water Co.* 6 P.S.C. 666, 1924.
[49] *Casanave v. Overbrook Steam Heat Co.* 7 P.S.C. 397, 1925.
[50] *Hall v. Clark's Summit Water Co.* 8 P.S.C. 227, 1926.
[51] *Walter v. Nokomis Water Co.* 10 P.S.C. 553, 1930.

more or less directly related to the physical property, were depreciated, while in numerous, though not all cases, organization, legal, and promotion expenses, and cost of financing, which are not directly related to the physical property, and would not be incurred in case of reproduction, were not depreciated by the Commission.

METHODS OF ASCERTAINING ACCRUED DEPRECIATION

Even though the contending parties in a valuation case agree that accrued depreciation should be deducted in determining the rate base there is frequent dispute as to method to be used in ascertaining the amount of accrued depreciation. One school supports the age-life method, the other champions the inspection or observation method.

Federal courts have consistently supported the inspection method. In 1920 Judge Booth of the United States District Court for Kansas held that "In my judgment the element of depreciation should not be measured by a theoretical yardstick, but should be determined by a careful consideration of the actual facts touching the physical condition of each particular plant under consideration."[52] Likewise in 1921 a United States District Court, in valuing a light and power company, held that "Depreciation is something to be concretely determined by inspection, rather than by a theoretical yardstick."[53] The United States District Court for South Carolina ruled in 1925, in valuing a telephone and telegraph company, that in that case "Actual personal physical examination of the property by competent witnesses and their estimate and opinion of the actual depreciation is a better guide than any of the theoretical methods that have been suggested."[54]

[52] *London v. Court of Industrial Relations of Kansas*, 269 F. 433, 445, 1920.

[53] *City of Winona v. Wisconsin-Minnesota Light and Power Co.* 276 F. 996, 1004, 1921.

In the Pacific Gas and Electric case the United States Supreme Court supported the observation method in preference to the sinking fund method, which is a variety of the age-life procedure, stating that it was "preferable to averages based upon assumed probabilities."[55] The straight line method of determining accrued depreciation was criticized by the same court in 1926 on the grounds that it was based on age and "the estimated or assumed useful life of perishable elements." It was again held by the Court that "The testimony of competent valuation engineers who examined the property and made estimates in respect of its condition is to be preferred to mere calculations based on averages and assumed probabilities."[56]

The age-life method has its major support among the Commissions. As early as 1913 the California Commission supported the straight line method.[57] In 1917 the New York Commission approved the use of the age-life method, pointing out that this method had been approved by New York Courts.[58] The Maryland Commission supported the age-life method in preference to the observation method on the grounds that the latter approach fails to consider obsolescence.[59] The Illinois, Missouri, New Jersey, Oregon and Nebraska Commissions have also expressed their preference for the age-life method.

[54] *Southern Bell Telephone and Telegraph Co. v. Railroad Commission of South Carolina*, 5 F. (2d) 77, 95, 1925; other cases in which the observation method was approved were: *Westinghouse Electric v. Denver Tramway Co.* 3F (2d) 285, 1924; *United Fuel Gas Company v. Railroad Commission of Kentucky*, 13F (2d) 510, 1925; *Pacific Telephone and Telegraph Co. v. Whitcomb*, 12F (2d) 279, 1926; *Columbia Gas and Fuel Co. v. City of Columbus*, 17F (2d) 630, 1927.

[55] *Pacific Gas and Electric Co. v. San Francisco*, 265 U. S. 403, 406, 1924.

[56] *McCardle v. Indianapolis Water Co.* 272 U.S. 400, 416, 1926.

[57] *Re Stockton Terminal*, 2 Cal. R.C.R. 777, 790, 1913.

[58] *Moritz v. Edison Electric Illuminating Co.* P.U.R. 1917 A. 364.

[59] *Salisbury v. Salisbury Light, Heat and Power Co.* P.U.R. 1918 E, 331; *Re United Railways and Electric Co. of Baltimore*, P.U.R. 1926 C. 460.

The Montana, Alabama and Colorado Commissions have supported the inspection method.

In several instances Commissions have adopted a combination of the observation and age-life method. The Wisconsin Commission has ruled that accrued depreciation should be determined by the use of life tables, inspection and consideration of surrounding conditions.[60] Determination of the accrued depreciation of a telephone and telegraph company by a combination of the age-life and inspection methods was approved by the Colorado Commission.[61] The Minnesota Commission has supported the use of the combination method in preference to the sole use of inspection.[62]

Examination of the views of the Pennsylvania Commission as to the best method for ascertaining accured depreciation indicates adherence to the age-life and the combination methods. Little support for the pure inspection method could be found.

Unqualified approval of the inspection method was given by the Pennsylvania Commission in but two of the twenty-four cases in which there was dispute as to the proper method of determining accrued depreciation. Commission approval was given to the use, by the engineering conference, of the observation method in valuing a street railway on the grounds that "an inspection of the actual condition of the various classes of property," furnished a more reliable measure of accrued depreciation than did the method used by the complainant.[63] Scrutiny of the case reveals that the complainants simply contended for a 25 per cent deduction for accrued depreciation without offering any evidence to support their claim. Under the circumstances it seems that the Commission supported the inspection method more on account of the failure of the complainant to support its claim than because of the merits of the inspection method.

Approval of the observation method in the valuation of a heat and light company in 1933 was given by the Pennsylvania Commission in preference to a combination of the inspection and age-life method used by the complainant.[64] The utility held that a proper deduction for accrued depreciation should be 12 per cent as contrasted with the complainant's contention for a deduction of 31.5 per cent. The Commission was impressed with the careful and thorough examination of the physical condition of the property by the utility's engineers. While condemning the complainant's incomplete examination of the physical property the Commission paid scant attention to their claim that the age of the system and the extent of its obsolescence should be considered in ascertaining the accrued depreciation. Twelve per cent of the reproduction cost was accepted by the Commission as the measure of accrued depreciation.

Limited support of the observation method was given in a natural gas case decided in 1928. The Pennsylvania Commission was of the opinion that although sole reliance should not be placed on this method, since visible deterioration and accrued depreciation are not synonymous, it was of greater valuing in ascertaining accrued depreciation, when carefully done, than was the age-life method.[65] Although the Commission did not so state specifically, the whole discussion of the ascertainment of accrued depreciation leads one to conclude that neither the inspection nor age-life method if used alone afforded, in the mind of the Commission, a complete measure of accrued depreciation.

[60] *Re Racine Water Co.* P.U.R. 1917 D, 277.

[61] *Re Mt. States Telephone and Telegraph Co.* P.U.R. 1917 B, 198.

[62] *Re Northwestern Bell Telephone Co.* P.U.R. 1922 C, 762.

[63] *Allied Printing Trades Council v. Scranton Railway Co.* 5 P.S.C. 180, 191, 1921.

[64] *Borough of Grove City v. Union Heat and Light Co.* 11 P.S.C. 792, 1933.

[65] *City of Pittsburgh v. Peoples Natural Gas Co.,* 9 P.S.C. 423, 427, 1928.

Pennsylvania Commission support of the age-life method was given expressly or inferentially in thirteen of the twenty-four cases. The contention of a water company that, since an inspection of mains indicated relatively little accrued depreciation, the deduction for this item should be small, was rejected by the Commission in setting accrued depreciation at 22.4 per cent, as compared with 17.3 per cent by the respondent and 22.8 per cent by the complainant borough which used the age-life method.[66]

Considerable attention was devoted to accrued depreciation in the Scranton-Spring Brook Water Case. The Commission in its criticism of the observation method used by the utility pointed out that neither the age of the plant nor internal changes which would not be revealed by inspection, were given any weight by this method in setting the amount of accrued depreciation.[67] In this case the Commission concluded that "We are persuaded that the estimates of observed depreciation should be excluded, as they are only estimates of the amount of deferred maintenance or current maintenance uncompleted at the time of investigation."

The Cheltenham and Abington Sewerage Company claimed that since the plant was neither inadequate nor obsolete the only depreciation, physical, could be found by the use of the inspection method.[68] In its determination of accrued depreciation the Commission used the sinking fund method.

Likewise in valuing the Lehigh Water Company in 1935 the Commission ascertained the accrued depreciation for each item of physical property by the sinking-fund method.[69]

Commission adherence to a combination method of ascertaining accrued depreciation was evident in six cases. In valuing a gas and electric company in 1924 the Pennsylvania Commission declined to give sole support to the straight line method advocated by the complainant or to the observation method championed by the utility.[70] In addition to giving the proper weight to the inspection and straight line methods the Commission stated that it took cognizance of other factors "which in the light of its experience should be taken into consideration in connection with comparable gas and electric properties." How much weight was attached to respective elements by the Commission was not revealed.

While both the complainant and respondent used the inspection method in determining the accrued depreciation of a sewerage company in 1930 their estimates varied from 4 per cent by the utility to 40 per cent by the complainant.[71] Although conceding that the inspection method is a reliable procedure for finding the extent of physical depreciation the Commission maintained that it failed "to take into consideration other factors such as inadequacy and obsolescence which are incapable of mathematical determination but have their place in arriving at the amount of accrued depreciation." The Commission arrived at an accrued depreciation of 20 per cent by means of "a careful consideration of the record, bearing in mind the actual condition of the respondent's plant,

[66] *Borough of Columbia v. Columbia Water Co.* 9 P.S.C. 595, 599, 1929.

[67] *Scranton v. Scranton-Spring Brook Water Service Co.* 13 P.S.C. 1, 25, 1934.

[68] *Public Service Commission v. Cheltenham and Abington Sewerage Co.* 14 P.S.C. 76, 1935.

[69] *Taxpayers Protective Association of Easton v. Lehigh Water Co.* 14 P.S.C. 1, 13, 1935; other cases in which the Commission supported the age-life method were: *Greensburg v. Westmoreland Water Company*, 2 P.S.C. 1034, 1917; *Plymouth v. Wilkes-Barre Railway Co.* 4 P.S.C. 722, 1920; *Nace v. McConnelsburg Water Co.* 7 P.S.C. 700, 1926; 9 P.S.C. 629, 1929; *Lehighton Chamber of Commerce v. Lehighton Water Supply Co.* 10 P.S.C. 142, 1929.

[70] *Coatesville v. Philadelphia Suburban Gas and Electric Co.* 6 P.S.C. 316, 1924.

[71] *Ruttle v. Cheltenham and Abington Sewerage Co.* 10 P.S.C. 502, 508, 1930.

its age, its present adequacy and future usefulness."

In valuing the Chambersburg Gas Company in 1932 the Commission rejected both the complainant's estimate of 17.7 per cent based chiefly on the sinking-fund method and the utility's estimate of 7.8 per cent based on the observation method. Accrued depreciation, set by the Commission at 14 per cent, was obtained by considering not only the age of the property but also its present condition.[72]

Likewise in valuing a bridge in 1932 the Commission based its determination of accrued depreciation, $41,403, on the use of the sinking fund method plus a study of the past and probable future of the bridge plus an inspection or examination.[73] Using the observation method the utility admitted an accrued depreciation of but $16,282.

Again in 1934 the Commission adopted a combination method in finding the accrued depreciation of a sewerage company. The principal factors considered by the Commission were the probable life of the plant, obsolescence and the present condition of the property.[74]

The question of the relative merits of the age-life and observation method came before the Pennsylvania Superior Court in several cases. In five of the six cases the Court showed a pronounced inclination toward the combination method. Thus in the Lehighton Water Case, decided in 1930, the Court, while granting that the sinking fund method used by the Commission was an approved method, pointed out that other methods were also recognized.[75]

In the Clark's Ferry Bridge Case, 1933, while agreeing with the view expressed in the McCardle v. Indianapolis Water Company case that examination is preferable "to mere calculations based on averages and assumed probabilities," the Superior Court pointed out that an inspection must consider not only the exterior indications of deterioration but also "the internal changes which engineers agree are taking place." The Commission's use of both inspection and the age-life method was held by the Court to yield a result "nearer the actual accrued depreciation" than was produced by the utility's "cursory and surface observation."[76]

Likewise in the Chambersburg Gas Case the Court supported the Commission's fixing of accrued depreciation at 14 per cent by a combination of the age-life and observation method in preference to the utility's observation method which the court indicated only made allowance in this case "for the visible effects of wear and tear and made no allowance for obsolescence."[77]

In the Cheltenham and Abington Sewerage case, decided in 1936, the Court, while holding that the Commission "committed a fundamental error in fixing accrued depreciation solely by the sinking fund method," also pointed out that there is "latent depreciation" in physical property which is not readily revealed by inspection.[78] The Court's inclination toward the combination method was indicated by its statement that in arriving at an accrued depreciation of $13,500 it had given "weight to the evidence obtained by observation as to the actual physical condition of the plant" and had "taken into

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[72] *Chambersburg v. Chambersburg Gas Co.* 11 P.S.C. 583, 595, 1932.

[73] *Public Service Commission v. Clark's Ferry Bridge Co.* 11 P.S.C. 222, 230, 1932.

[74] *Frackville v. Frackville Sewerage Co.* 13 P.S.C. 512, 1934.

[75] *Lehighton Water Supply Co. v. Public Service Commission*, 99 Penna. Superior Court Reports, 574, 582, 1930.

[76] *Clark's Ferry Bridge Co. v. Public Service Commission*, 108 Penna. Superior Court, 49, 75, 77, 1933.

[77] *Chambersburg Gas Co. v. Public Service Commission*, 116 Penna. Superior Court 196, 202, 1935.

[78] *Cheltenham and Abington Sewerage Co. v. Public Service Commission*, 122 Penna. Superior Court, 252, 269–271, 1936.

account all of the evidence as to all forms of depreciation." The $13,500 set for accrued depreciation by the Court was $7,000 larger than the sum fixed by the Commission.

Using the above mentioned sewerage case as a precedent the Court ruled in 1937 that in using the age-life method the Commission was "ignoring all the evidence as to the conditions of the plant as shown by observation except in setting up a theoretical life for the parts of the plant."[79]

Support was given to the age-life method as the sole determinant of accrued depreciation in but one case. Referring to the Commission's use of the sinking fund method in the Scranton-Spring Brook Case the Court held that "in the method and principle used we find no reversible error."[80]

RELATION OF ANNUAL AND ACCRUED DEPRECIATION

If a utility is granted an annual depreciation allowance which is larger than the deduction made for accrued depreciation warrants it is evident that the consumers are really supplying the utility with funds to augment its property.

Numerous statements by Commissions and courts have been made as to the importance of an annual depreciation allowance proportionate to the deduction for accrued depreciation. The Interstate Commerce Commission in its study of depreciation charges pointed out that "It is essential to bear in mind, however, that there is an inseparable connection between the straight-line method (of computing annual depreciation) and the principle that accrued depreciation represented by the depreciation reserve must be deducted in ascertaining the rate base."[81] In 1927 the New Jersey Commission ruled that whatever method is used to compute accrued depreciation should also be followed in ascertaining annual depreciation.[82] The New York Commission, in valuing a railroad in 1933, made an allowance for annual depreciation which was in line with its deduction for accrued depreciation.[83] On several occasions the United States Supreme Court has indicated the wisdom of changing the amount allowed for annual depreciation if experience indicates that the annual reserve is excessive. In the Illinois Bell Telephone case the Court ruled that it is not necessary to continue the setting aside of excessive annual reserves.[84] A similar ruling was made in the Clark's Ferry Bridge case decided in 1934.[85] The extent to which the reserve created by annual allowances for depreciation may differ from the existing depreciation was illustrated in the case of Lindheimer v. Illinois Bell Telephone Co. in which the utility's reserve in 1931 was $48,362,000 as compared with existing depreciation of $15,828,000. In commenting on this considerable discrepancy the Supreme court reiterated its stand that the reserve created by annual allowances for depreciation must be consistent with the deduction for accrued depreciation by holding that "predictions must meet the controlling test of experience."[86]

Efforts of utilities to secure a small deduction for accrued depreciation while at the same time contending for a relatively large annual depreciation allowance, have in most instances been rejected by the Pennsylvania Commission. A water company's claim that mains having an estimated life of seventy-five years and a re-

[79] *Penna. Power and Light Co. v. Public Service Commission*, 128 Penna. Superior Court 195, 211, 1937.

[80] *Scranton-Spring Brook v. Public Service Co.* 119 Penna. Superior Court 117, 141, 1935.

[81] *Depreciation Charges of Telephone Companies and Steam Railroads*, 118 I.C.C. 295, 356, 1926.

[82] *Re Elizabethtown Water Co.* P.U.R. 1927 E. 39.

[83] *Re Yonkers Railroad Co.* P.U.R. 1933 B, 80.

[84] *Smith v. Illinois Bell Telephone Co.* 282 U. S. 133, 158, 1930.

[85] *Clark's Ferry Bridge Co. v. Public Service Co.* 291 U. S. 227, 239, 1934.

[86] *Lindheimer v. Illinois Bell Telephone Co.* 292 U. S. 151, 170, 1934.

production cost new of $170,000 have depreciated but $36,000 in forty years, was held by the Commission to be inconsistent with its request for an annual depreciation allowance sufficient to provide the depreciated reproduction cost of $144,000 in the remaining thirty-five years.[87]

The Commission likewise rejected the contention of a bridge company that although the observable depreciation six years after the bridge had been built was only $16,282, it should be allowed $21,210 for annual depreciation. In refusing this request for an annual allowance which was more than seven times the average annual depreciation for the six years the Commission remarked that "At the same time it (the utility) claims that the value of its property for rate-making purposes should be decreased only to the extent of the actually observable deterioration irrespective of what experts may know is the probable future of the structure and irrespective of the greater amounts which have been set aside to restore the structure at the end of its useful life. Clearly such an attitude is inconsistent and can't be adopted."[88]

While conceding that the annual charge to the depreciation reserve was a bookkeeping device, the Pennsylvania Commission maintained that in determining annual allowance for depreciation and the accrued depreciation "identically the same elements" must be considered.[89] Granted that this relationship between the accrued depreciation and the reserve cannot be precisely computed by mathematical means, the fact that the reserve is intended to be used to replace property shows the relationship and also the necessity for keeping the reserve as close to the accrued depreciation as possible. The utility's claim for an annual allowance of $10,000 was reduced to $7,500 by the Commission. In making this reduction the Commission pointed out that the Company's experience and testimony indicated the excessive nature of its request.

The wide discrepancy which may exist between the amount claimed for annual depreciation and the estimate of accrued depreciation was revealed in the Scranton-Spring Brook case. Accrued depreciation on a twenty-six year old reservoir was set at $2,200 by the utility's expert while the claim for annual depreciation on the same reservoir was fixed by the same expert at $11,454.[90] In determining the allowance for annual depreciation the Commission very clearly indicated that this sum was the amount necessary to amortize the depreciated reproduction cost of the property over its remaining service life.

How closely the amount allowed for annual depreciation depends upon the Commission's estimated accrued depreciation was indicated in the valuation of a water company in 1934.[91] The Commission was of the opinion that "The allowance for annual depreciation to which respondent is entitled must be determined in the light of our conclusions as to the depreciation which has already occurred." Here, as in the Scranton-Spring Brook case, the Pennsylvania Commission set as the annual depreciation the sum necessary to reimburse the utility for the depreciated reproduction cost of the plant during the rest of its service life.

Efforts of a sewerage company to convince the Commission that, although the accrued depreciation over twenty-six years had been but $8,935, the allowance for annual depreciation should be $2,000, were rejected by the Commission.[92] The only

[87] *Columbia v. Columbia Water Co.* 9 P.S.C. 595, 600, 1929.

[88] *Public Service Commission v. Clark's Ferry Bridge Co.* 11 P.S.C. 222, 231, 1932.

[89] *Chambersburg v. Chambersburg Gas Co.* 11 P.S.C. 583, 594, 600, 1932.

[90] *Scranton-Spring Brook Water Service Co.* 13 P.S.C. 1, 25–26, 1934.

[91] *Kowalski v. Mocanaqua Water Co.* 13 P.S.C. 377, 384, 1934.

[92] *Public Service Commission v. Cheltenham and Abington Sewerage Co.* 14 P.S.C. 76, 86–87, 1935.

conditions under which a future annual allowance of approximately six times that shown in the past could be granted said the Commission, were a change in the nature of the community which would make the plant obsolete or inadequate, or a sudden increase in the rate of depreciation. No evidence could be found by the Commission to indicate the existence of either of these conditions. In discussing the relationship between the annual depreciation allowance and accrued depreciation the Commission reminded the respondent that: "If respondent hopes to sustain a high annual allowance for depreciation it must determine an accrued depreciation in keeping with such claim. If, on the other hand, respondent seeks to establish a low accrued depreciation, its annual allowance for depreciation must be consistent with that accrued depreciation."[93]

[93] Other cases in which the Commission emphasized that the amount allowed for annual depreciation must be consistent with the accrued depreciation were: *Frackville v. Frackville Sewerage Co.* 13 P.S.C. 512, 1934; *Taxpayers Protective Association of Easton v. Lehigh Water Co.* 14 P.S.C. 1, 51, 1935.

On several occasions the Pennsylvania Superior Court emphasized the importance of maintaining a relationship between accrued and annual depreciation. Although accrued depreciation refers to the past and is actual, while annual depreciation refers to the future and is an estimate, the Court pointed out that "There should be some reasonable relation between them, at least in a structure like this (a bridge), which is subject to gradual but continuous disintegration from the moment of its depreciation, rather than to sudden change and decay."[94] In 1936 the Court reiterated its belief that "There is a substantial relation between accrued and annual depreciation for undoubtedly the experience of the particular utility in the past is an important element to be considered in estimating future depreciation."[95]

[94] *Clark's Ferry Bridge Co. v. Public Service Commission*, 108 Penna. Court 49, 74–75, 1935.

[95] *Cheltenham and Abington Sewerage Co. v. Public Service Commission*, 122 Penna. Superior Court 252, 268, 1936; a similar view was expressed in *Scranton-Spring Brook Water Co. v. Public Service Commission*, 105 Penna. Superior Court 203, 225, 1931.

THEORY AND PRACTICE

CHRISTIAN OEHLER

I

THE SUBJECT of theory and practice is usually conceived as one of theory versus practice, thereby implying conflict rather than coöperation. It is a subject about which many misconceptions exist in the minds of those who have given no serious thought to the very close correlation between the two. This correlation exists because there can be no scientific practice of accountancy without a sound body of principles upon which the practice can be based.

It is probably not very far from the truth to assert that these misconceptions have arisen because of a failure to distinguish between the ability to accomplish a desired result (the characteristic which marks the "practical man") and the scientific principles and rules of procedure in accordance with which the work must proceed if the desired result is to be obtained. There are many persons who regard a man as "theoretical" if he spends his time in devising fanciful plans of procedure that may never work, or that will prove entirely too costly to apply, if they can be made to work. This is clearly the result of a failure to accord to theory and practice each its proper significance; but even more properly it might be considered the result of a failure to understand the real function of theory.

And so it comes about that the subject

is considered as "theory versus practice" and viewed in an argumentative light, as though one must take sides, this one defending theory and that one defending practice. But, because of these misconceptions, no common ground can be selected as a starting point and no useful conclusions reached. It is time that the word "versus" was taken out of the subject; it has been there too long and has served no useful purpose whatever.

Practical men have been heard to say that when one is facing a practical situation, it may be necessary "to throw all your theory out the window." His statement is false if the theories to which he refers are sound. Accounting theories do not have the finality of mathematical theories; they have many exceptions and these exceptions are part of the body of theory; but when you apply an exception to a rule, you do not throw the rule out the window. Moreover, the science of business and the science of accounting are neither of them static and theories that were found to work in the past may no longer fit conditions resulting from new developments. Both those who take the side of theory and those who take the side of practice will readily agree that such a theory, having become out-moded should be thrown out the window.

When the concept of theory and the concept of practice are viewed each within its own limits, there is no conflict between them, there never has been any conflict, and by the very nature of the situation, there never can be any conflict. The theoretical aspect of accounting is that which views it as a science, albeit not an exact science (because of the human element) and the theories of accounting are nothing but principles expressing the result of the scientific analysis of the significance of the financial condition or the operating results of a business enterprise and of the methods needed in order that they may be properly expressed and interpreted. The practical aspect of accounting is that which views it as an art, viz., the practical application of the theories of accounting to the solution of the problems of business. Wherever an apparent conflict between theory and practice exists (and any practical man will tell you that such conflicts continually occur), it is for one or more of the following reasons: the theory has become outmoded; the theory has been rigidly construed, without regard to the exceptions (the exceptions that prove the rule); the theory has been improperly stated; or, the practice is *unsound*. To say that the conflict is real and not an apparent conflict is equivalent to asserting that the practice of accounting does not rest upon a solid scientific basis. Such a statement is, on the face of it, absurd. Hence, any discussion of theory and practice should be treated under the heading "Theory *and* Practice" implying correlation and coöperation between the two, and not under the heading "Theory *versus* Practice" implying conflict.

II

One of the misconceptions that result in bringing the word "versus" into the subject, arises because the word "theory" is frequently used in the sense of hypothesis, speculation, dream-thoughts. This confusion has extended so far that a great many accountants today have abandoned the word "theory" entirely and refer to the theories of accounting as accounting principles, thus side-stepping and avoiding the arguments and ridicule that result when the words "theory" and "theoretical" are mentioned to the so-called "practical" man. These arguments usually follow the line of thought that theories are merely speculations, the product of imagination, or that they are vague ideas or dreams in the mind of a visionary who is entirely out of touch with the world as it actually exists. Of course such speculations may be

utterly useless, perhaps even harmful; but they are not theories unless they can form the basis for practical work; they are not even hypotheses unless they are offered, not as the basis for practical work, but as a basis of experiment, to be tested for the purpose of determining whether or not they will work.

Theories are not the vague ideas and dreams of a visionary, but it is of such stuff that theories may, perhaps, be built. The visionary is the man who is not satisfied or contented with things as they are; he is the student who finds his joy in the research department of an industrial enterprise or in the laboratory of a technical school or university. He is continually searching for new thoughts, for new and better methods of procedure. Gradually, as a result of his work, new bits of knowledge are acquired. Much of it useless, perhaps, when viewed in the cold light of material utility; but some of it may prove to be useful when viewed in the same light, and some of it indeed very valuable. These little bits of knowledge are built into working hypotheses, which are tested again and again; finally, new machines, new processes, new procedures, new methods of interpretation result and the hypothesis is admitted to the body of science as a theory. And thus it is that, little by little, new principles, new theories are added to our knowledge.

Far from being speculations or vague ideas, theories are very practical things. They are considered sound and tenable only as long as they are found to work. For many years, the theory that the earth was flat, that it was at rest, that it was the center of the universe, was held by scientists; but when it was found that the theory did not work, that many matters could not be explained by the theory, and that many matters were in fact in contradiction of the theory, the theory was abandoned as unsound and untenable. Theories are theories only so long as they work—only so long as they are of practical value.

It has been said that to despise theory is to have the excessively vain pretension to do without knowing what one does, and to speak without knowing what one says. But there are many men who state that they despise theory without actually doing so. Such a man might say, as many of them have in the past, that a certain idea "may be all right in theory, but it won't work." If he is really a practical man, that is, if he possesses the ability to accomplish the work about which he is talking, then he is very probably right when he says "it won't work." If, however, there can be no conflict between theory and practice, then the other part of his statement, viz., that it may be all right in theory must be wrong. His statement, therefore, requires analysis. What is this theory that "won't work"? It may be that changing conditions in the modern world of business have brought about a situation which requires a change of procedure; a new game requires new rules; and the old theory about which the practical man now says that "it won't work," has become unsound and untenable and should be abandoned as the Copernican Theory was abandoned, to be replaced by modern principles. It may be, however, that the idea which was said to be "all right in theory" was in reality a statement of a general principle which did not apply to the particular situation under consideration because of peculiarities in that situation; that here was an exception to the rule; but such an exception, if it is applicable to all similar situations, is also a part of the general body of theory. If, on the other hand, it is merely an isolated exception useful only in this particular situation, it is nonetheless true that the theory does not apply, and therefore the idea is not "all right in theory"; it is merely an

isolated fact from which general conclusions and general principles cannot be formulated. In contradistinction to the idea which the practical man rejects with the phrase "it won't work," the same practical man has ideas which he has formulated into a general principle and which he says "will work"; this is the real theory that fits the situation. The reason it can be stated with so much assurance that this is the theory is precisely because it will work. The "practical" man may be horrified at being called "theoretical," but his expression of opinion as to what will or what will not work is "theorizing" nonetheless if his opinion of what will work is stated as a general proposition applicable to all similar situations. Isolated facts, on the other hand, are useful to the accounting profession and to the science of accounts only to the extent that they can be classified and made the basis for the formulation of general principles.

III

A further misconception arises through confusing the concept of theory with the concept of practice, by trying to make the two words do duty for one and the same thing. This is the result of confusing the science of accounting with the practice of accountancy. A man who is engaged in the public or private practice of accountancy (as distinguished from the one who is merely doing the clerical work incidental to most accounting work) needs more than a theoretical knowledge of the principles governing his work. If he is to be of any value to his clients, his profession and himself, he must possess the ability to perform the work in conformity with customary standards, or to direct its performance in conformity therewith.

The ability to recognize what accounting theories are applicable to a given problem and to apply those theories skillfully to the solution thereof is of the greatest importance. The employer does not pay his employee for what he knows, but for his skill in the application of his knowledge; by the same token, the client does not care particularly how extensive his accountant's knowledge of theory may be, provided he is able to serve him properly. A man with limited knowledge of accounting theory, but possessed with the ability to use that little well, may be able to serve certain clients very well, so long as the problems that arise in his practice involve only accounting theories with which he is familiar. A man with very extensive knowledge of accounting theory, on the other hand, may not be able to put his knowledge into practice; a man who is thoroughly familiar with the theories of bank accounting and with bank examination procedure based on those theories is not, ipso facto, able to make an examination of a bank; for instance, he may not possess the ability to direct the work of others.

The ability to solve accounting problems is more important to the practicing accountant than the knowledge of the accounting theories applied in their solution. While one may know what the accounting theories are without being able to apply them to a given problem, the reverse of this is hardly true. One would hesitate to say that an accountant could apply accounting theories to a given problem without knowing what these theories are; such a knowledge he must possess, even though the knowledge is imparted to him by a superior as instructions at the moment of taking up the problem.

Skill in the application of accounting theories to the solution of practical problems comes only from practice and that is the primary reason why so many practical men lay so much stress upon experience. The pianist who practices long hours at the keyboard, is a better pianist, other things being equal, than the one who does not. The accountant who makes of every en-

gagement a means of improving himself in his ability to apply his knowledge becomes a better accountant with every bit of experience that he acquires. By making a careful study of each engagement, he not only adds to his skill in the application of theory, but he may also add to his knowledge of theory as well. The important point is that he becomes a better accountant as his skill increases, even though he may add nothing to his knowledge of theory.

The accountant who does not possess a sufficiently comprehensive knowledge of general accounting theory before beginning his practice, is not a practical accountant because of that fact. If he becomes a practical accountant at all, it is in spite of that fact rather than because of it. As a matter of fact, his experience will be worse than useless to him unless he uses it as a means of acquiring a sound knowledge of theory. If he does not acquire this knowledge as a result of his experience, he cannot become an able accountant or a practical accountant at all. If he does acquire the necessary theoretical knowledge, then it is probably a fair statement to make, that his knowledge of theory was acquired the hard way, and frequently at the expense of the client, the employer, or both.

The technical school or university is the proper place to acquire the knowledge of accounting theory; it is less expensive and more rapid to acquire the knowledge in this manner. The method of acquiring a knowledge of accounting theory while working as an accountant and depending solely upon the opportunities for the study of theory afforded by the performance of practical work is entirely too slow. There is no doubt that it can be very effective, but it requires a considerable amount of time. Seniors are usually much too busy to undertake the systematic instruction of their assistants; but even if they were willing to undertake the task and could find the time to do it, it would of necessity be subordinated to the principal task of completing the professional engagements to which they have been assigned. Progress would have to be confined to the opportunities afforded by the particular engagement; and whatever progress was made, might conceivably be made at the expense of the employer or of the client. But, whether the knowledge of accounting theory is acquired at the technical school or university or in the field while actively engaged in accountancy practice, skill in the application of theory comes only as a result of experience, of practice. Hence where the knowledge of theory is acquired in school, practical experience is needed in order that the requisite amount of skill may be acquired.

Under the direction of a skilled supervisor or senior, this experience may be gained without added expense either to employer or to client, provided that adequate knowledge of theory is possessed as a background against which to analyze and profit by the experience. An inexperienced accountant is first assigned to simple tasks and paid a small stipend; if he understands the theory involved in these simple tasks, the senior will not need to give him instruction in the theory, but merely give him such help in the application of the theory as he will need. As he grows in experience and skill, his tasks become more difficult and his compensation is correspondingly increased.

IV

Another misconception arises through the confusion which comes about through a failure to distinguish between the word "theory" and the phrases "common sense" and "sound judgment." It frequently happens that a man who is lacking in sound judgment and common sense is said to be "theoretical." This is an unfortunate

statement of the case because of the implied adverse criticism of theory. The criticism of the man probably should have been, not that he was "theoretical," but rather that his knowledge of theory was hazy or very faulty, if the question of theory is to be brought into the picture at all. It might be nearer the truth to omit all reference to theory and state that the man is lacking in good judgment or in common sense or both. Frequently this lack of judgment and common sense reflects itself in inability to recognize and select the theory that applies to the project under consideration; hence it would probably be better to describe him as "not sufficiently theoretical."

Sound judgment and common sense are by far the most important of all the qualifications which are necessary for the public or private accountant or auditor to possess. Judgment may be defined as the mental faculty of deciding correctly by the comparison of facts and ideas, i.e., facts with facts, ideas with ideas, or facts with ideas. This faculty of deciding correctly is a necessary accompaniment of common sense and both may be improved by experience provided the acquisition of experience and the resulting skill is based upon a thorough knowledge of theory. It has been repeatedly said that common sense is, of all kinds, the most uncommon; it implies discretion, good judgment and true and practical wisdom applied to common life. It has been described as the crown of all the human faculties. An accountant is not practical because he possesses judgment and common sense and theoretical because he lacks these qualities; an accountant is practical, if at all, precisely because he possesses an adequate knowledge of theory, because he is able to select the theory or theories applicable to the case in hand, and because he possesses adequate skill in the performance of his task. There is little question that sound judgment and common sense are both essential; there can be no criticism of the statement that an accountant cannot be considered practical if he is lacking in these two essential characteristics; but the possession of these qualities alone will not make him practical and the absence of them most certainly does not make him theoretical.

There is, or at least there should be no stigma in being called "theoretical" if by "theoretical" is meant "possessing a knowledge of theory." A man may be theoretical without being practical, but the more an accountant knows about the theory of accounts, the more practical and useful he may become.

V

Theory and practice are not, therefore, opposed one to the other if the proper significance is attached to each of the two words. On the contrary, theory and practice are closely related; each serves the other; each without the other is barren; together and only together they form a whole. Theory provides the principles according to which the practical work is carried out. Practice provides the background against which untenable theories are proven to be such and serves further to provide the basis for their rejection. In the ideal situation, education lays the foundation by providing the proper background of accounting theory; experience provides the opportunities for acquiring the skill, which, together with the other qualifications of good judgment and common sense, makes for sound practice. And it should be remembered that our aim as accountants should be sound practice above all other considerations.

A CRITIQUE OF THE REVISED STATEMENT OF ACCOUNTING PRINCIPLES

GEORGE R. HUSBAND

THE REVISED statement of "Accounting Principles," prepared by the Executive Committee of the American Accounting Association and published in the June 1941 issue of THE ACCOUNTING REVIEW, is a decided improvement over the statement of principles previously published in June 1936. Nevertheless, it still contains spots where further burnishing would appear to contribute both to desirable refinement and to greater harmony between the principles and the fundamental thesis upon which they are based. The present paper makes no point of the need for additional accounting services in the form of statements exhibiting the influences of changing dollar values and changing economic values. Developments in these directions can safely be left to the pressure of external forces. An attempt will be made, rather, to point out and emphasize inconsistencies in the principles and to consider the use of terms that may be misleading when used in connection with the task that historical accounting is designed to accomplish. Attention is devoted to the latter first.

WORDS THAT TEND TO CONTRIBUTE TO MISUNDERSTANDING BECAUSE THEY FREQUENTLY HAVE A DIFFERENT MEANING IN ECONOMICS

Historical accounting is a scheme, either logical or traditional, developed for the purpose of accomplishing certain rather specific ends. Its principles should be consistent with both its fundamental assumptions and its purpose. A large number of the terms used in connection with the scheme and the results obtained from its application have specific meaning and, one might even say, validity, only within the framework constructed. Thus, income is an historical accounting income, proprietorship is usually an expression of ownership only within the recorded historical experience, etc. That certain events did occur in the past and thus contribute to an accumulated mathematical resultant is the truth which historical accounting is intended to portray. In a large number of cases, however, the public, businessmen, and perhaps even accountants themselves have fallen into the error of misinterpreting accounting data as exhibiting a different truth—a reality existent as of the present, separate from the historical origin. There has been a commendable attempt in recent years to purify the accounting terminology, to use words more consistent with the former and less likely to be misinterpreted as meaning the latter. Thus, the Committee on Terminology of the American Institute of Accountants in advocating that some other word be substituted for the term "surplus," states that "it is hardly too much to say that the word 'surplus' as currently used is generally either non-descriptive or mis-descriptive, since in the public mind it has a connotation of value."[1] In this same direction, the decline in the use of the terms "net worth" and "value" is consistent. Great care should be exercised to see that in so far as possible the terms used in stating accounting principles are not likely to be misleading. While it is held by some that the general public should recognize the fact that the terms used are technical terms, and that as such it should not

[1] *Report of the Committee on Terminology*, No. 12, Sept. 1941.

attempt to interpret them, it is far better procedure to avoid the use of equivocal words whenever possible. The following appear to be spots where the use of other terms would serve to emphasize the accounting interpretation.

(1) In the preparatory note the Committee states that "In the corporate field the most important use of accounting lies in the preparation of statements of financial position and of operating results." In the basic assumption the Committee also refers to the accounting statements as financial statements. The term financial position is equivocal. While it implies that it is the general monetary position of a firm that is being presented, or that a firm's status is being exhibited in monetary terms, the financial position presented in the balance sheet is a specific variety of financial position: it is an accumulative end result of the recorded historical experiences. The terms financial position or financial statement may also properly be interpreted to mean the current worth or value status of a firm, or a current worth or value statement. Many individuals so interpret them. Although the terms have long been used as the Committee uses them, to refer to the statements rather as accounting statements, as statements exhibiting the accumulative historical position, as presenting the condition resulting from historical experiences, etc., would be a step in the direction of specificity.

It should be noted, too, that few of the accounting statements to which the Committee lends its support exhibit operating results as such. While it is possible to quibble over the meaning of the term operating, it is evident that most corporate statements purporting to exhibit operating results contain much that expresses the influence of external economic forces over which the management has no control. The rise and fall in the value of the product sold and of the remaining inventories, the rise and fall in the value of the assets used in production, the inertia of wages and of contractual prices, a shift in the value of money, all play a part in determining the net result presented in the so-called operating statement. The miller who does not hedge, for instance, will usually experience an increase or decrease in profits because of his speculation in raw materials. In extreme cases, the so-called operating profit or loss may be no more or less than the crystallized appreciation or market depreciation of fixed assets. What are operating results? Has accounting ever depicted them?

(2) In the basic assumption the Committee states that "A knowledge of the origin and expiration of the economic resources of a company and the resultant changes in the interests of its creditors and investors is essential. . . ." One may waive aside the omission of the fact that it is also desirable to secure a knowledge of the "expirations" of specific "economic resources" which do not cause "resultant changes in the (amount of the monetary) interests of creditors and investors" if the statements are to be truly intelligible. But, what are economic resources? Evidently they are assets which are set forth in terms of their historically recorded amounts. In the literature of economics, however, these terms usually refer to items of wealth conceived of as existing current values (sometimes corrected for changes in price level). To an accountant the terms thus imply "costs"; to an economist, and often to the general public, they imply current economic values. Although the values recorded by the accountant are usually current at the date of record, the thesis underlying the principles holds that changes in economic value which occur subsequent to the date of record should not be recorded. It follows, therefore, that the accountant does not record the "expirations" of true economic "economic re-

sources." It would appear that terms could have been chosen which would have avoided this possible "mis-description" and the possible resulting misinterpretation.

(3) Principle A-1 states that "Cost incurred is measured by cash outlay or by the fair market value of considerations other than cash." Here, we have an explicit excursion into the realm of values or economics. Cash outlay cost is an accounting cost; "market value of considerations other than cash" cost is an economic cost. The former represents the sacrifice of something which, within the historical accounting scheme, was properly recorded on the books; the latter represents the sacrifice of something, in part at least, which according to the scheme should not have been recorded on the books. The books would thus not show the total cost since according to the rules the entirety could not properly be recorded as such. Does the Committee mean that accountants should take the position that some of the items or amounts that are subsequently to constitute costs ought to be recorded while other items that are later to constitute costs ought not be recorded prior to their sacrifice? Ought not all of the items that are in a position sufficiently definite to become costs be recorded as such? Is the term cost to be used interchangeably to refer either to accounting costs or to economic costs? One wonders if the Committee could be induced to advocate that the term also be interpreted to mean subjective or psychic costs. Thus profit would have a cost. When one deliberately incurs a cost one is usually in position to reckon or count that cost prior to engaging in the transaction. It thus appears that value can be determined prior to sale. What then becomes of the position frequently taken that values should not be exhibited in the statements because of the fact that they cannot be determined with sufficient objectivity and definiteness?

Principle A-8 states that "In the case of resources received in exchange for product or other assets, the selling price of the product or other assets, expressed in realizable cash terms, becomes the cost of such resources received for subsequent accounting purposes." The Committee goes to great lengths to reduce everything to a cost basis. Here profit, previously unrecorded—the value of the business' services, interest on invested capital, rent on owned buildings and other assets, the producer's surplus, etc.—is counted as cost. From one point of view this may be good economics—the value of the thing given up is equal to the value of the thing received, but do economists go so far as to count producer's surplus a part of cost prior to its recognition?

It should be noted, too, that a cost is usually incurred in a purchase transaction. Thus in Principle A-8, one is considered to be buying cash or accounts and notes receivable; profit is thus derived from the purchase of these items through the medium of exchanging an equal value. When a firm sells its building it is buying cash. What a curious interweaving of accounting and economics, of purchase and sale! Why did the Committee not say simply that "Factors of production and other resources of an enterprise are measured at the date of acquisition by costs incurred, amounts invested, amounts donated, and/or amounts received in exchange for product or services sold, on a cash or cash-equivalent basis . . ."? Why the perversion of the accounting term cost?

(4) The term surplus has long possessed a nuisance value; it is also exceedingly difficult to define with exactness. As the American Institute Committee on Terminology suggests, the use of the term might well be abandoned.

(5) The terms capital and income are

subject to conflicting interpretations because of the manner in which they are used in economics. It would also seem to be desirable that other terms be substituted for them.

TERMS AND STATEMENTS THAT IMPLY AN IDENTITY OF ITEMS ON THE TWO SIDES OF THE BALANCE SHEET

(1) Section B states that "Revenue is measured by the realizable value, on a cash or equivalent basis, of the product of the enterprise, either goods or services." But what is the revenue that is thus measured? Is it the realizable value itself, or something else? That is, is the realizable value that provides the measure asset or revenue? Principle B-1 states that "Where the immediate consideration received from the customer is in a form other than cash the amount of revenue realized and recognizable is restricted to the cash value of the consideration." Although one serves as the measure of the other, two elements are involved; asset and revenue are not one and the same.

Principle B-5 states that "Discovery value, timber growth, and other forms of accretion are generally not to be recognized as realized revenue." Here property and revenue are one and the same. The statement does not say that the increased value resulting from such accretion does not constitute a basis justifying the recognition of revenue. The implication is obvious: were revenue to be recognized it would appear on the asset side of the balance sheet. Principle B-6, that "Appreciation or enhancement resulting from changing market prices of existing units of property does not represent realized revenue," may or may not involve an identifying of the two sides of the balance sheet depending upon what the Committee means the term "represent" to imply.

In the statement "Reserves set aside to indicate the manner in which profits have been invested . . . " (Principle D-3) there is a clear implication that profits and assets are one and the same. The reserves themselves are not stated to be "set aside" out of profits but rather to indicate how profits, something else, are invested. What one usually invests is assets or cash. Therefore, assets, cash and profits are synonymous. Yet, in accounting, profit is usually a credit balance.

(2) The comment following Section D states that "the retirement of a stockholder's equity may involve a distribution of earned surplus." Principle D-2 speaks of earned surplus being charged with "distributions to stockholders, including amounts credited to paid-in-capital upon the issuance of stock dividends." Waiving the question of whether a stock dividend involves a distribution to the stockholders, one may well ask what if anything is ever distributed to stockholders. When a stockholder receives a dividend he usually receives a check, cash or other items that previously occupied a place among the assets. The experience is frequently the same when a stockholder's equity is retired. If the accountant speaks of this as a distribution of surplus, what is more natural than to conclude that surplus and cash or assets are one and the same? Hence, the accountant has the burden of proving that cash and surplus are different.

It is a serious question, also, whether surplus can be distributed. Assets can be distributed physically, but certainly surplus cannot be distributed physically. The point may be made, however, that a dividend involves a distribution of two things: cash or the asset and the ownership of the asset; that the distribution of surplus is a distribution of the pooled ownership of a certain portion of the assets, a distribution of the title to and control over the assets. Surplus, itself, however, is neither the title nor the control; rather, it exists as an equity because these things are possessed

in respect to assets having a greater monetary expression than the sum of the liabilities and capital stock (plus capital surplus). Second, a dividend does not distribute the existing title and control; it creates a new title and vests a new control. Nor does it distribute the existing ownership; instead it creates a different ownership; it substitutes an individual ownership for what one might, with grace, call a fungible ownership of each and every dollar or dollar's worth possessed. It seems difficult, therefore, to see how surplus as such can be distributed in anything like the sense in which it may be said that assets are distributed.

A second objection may be raised against the criticism here levied on the basis of the fact that the term distribution may also mean classification or re-classification—in the manner in which administrative expenses are said to be distributed to various other departmental expenses. The term dividend, however, implies a distribution in the sense of a giving out, not a distribution in the sense of a mere reclassification. In the former a total vacancy results, in the latter there is a mere shifting within the same whole. Actually, therefore, it would seem proper to state that assets are distributed and surplus is reduced correspondingly.

(3) Principle D-3 speaks of "Reserves set aside." Here, too, the terms set aside would appear to be more correctly used if if they referred to the setting aside of assets. When the layman speaks of setting aside a reserve, he usually means that he has taken cash and placed it in a special fund for the purpose of meeting some future contingency. It is true that Webster's defines setting aside as reserving, setting apart as the setting aside of part of one's income, but its definition of income seems to accord more closely with economics (a flow of goods and services) than with the accounting credit designated as income. Actually, when one sets up a reserve does one not merely earmark or classify a portion of surplus in such a manner as to indicate that it ought not be charged when dividends are declared and thus convey somewhat more definite information as to intent to the stockholders and the public? But what is "set aside"?

WORDS IN GENERAL

(1) Principle A-3 speaks of "cost which has been absorbed in producing revenue or has otherwise expired . . . ." Just how is accounting cost absorbed and how does it expire? Production may absorb the physical materials and the life-period of an asset may expire, but I fear that if the accountant did not amortize or charge-off the recorded accounting cost rather consciously and specifically that it would remain forever in spite of the physical absorption of the product or the expiration of life periods. Is accounting cost then to be identified with physical properties or life terms, or should we state that it is the accountant's task to determine the portion of the cost that should be amortized?

(2) In Section B "Revenue is measured by the realizable value, on a cash or equivalent basis, of the product of the enterprise, either goods or services." In Section C "Income is measured by matching revenues realized against costs consumed or expired . . . ." (Usually it is done by matching costs against revenue rather than as stated.) In the first statement revenue is measured by comparison with something else, the usual procedure followed in measuring even though that something is not a standard. In the second statement income is measured not by comparison but by mathematical subtraction. We may determine the amount of income in this manner but do we measure it thus, or do we still measure it by certain "realizable values" affecting the left side of various accounts?

(3) Principle A-5 states that "The excess of the face or maturity amount of a liability over the cash or cash equivalent supplied by the creditor represents a form of interest payable at maturity . . . ." If such an excess is a form of interest it is a form that exists in the womb of the future; at any given balance sheet date it is not even a foetus. Interest, per se, can come into being only after an interval of time has elapsed. Actually, the excess spoken of is indicative of a mere contractual agreement to pay an amount of interest at the maturity of the obligation. No equivalent value or service has been received. It is questionable, therefore, whether an amount occupying such a status can properly be spoken of as "a form of interest." One might just as well speak of the wages that an employer promises to pay a new employee at the end of his first two weeks of service as a form of wages payable, of the price that a customer agrees to pay at the end of a thirty-day period for goods just ordered as a form of goods payment, of the taxes that one believes he will be liable for if he does business during the next fiscal period as a form of taxes payable, etc. Does this not appear to be carrying "form" to extreme? Is the form involved a form of interest or a form of contract?

(4) The Committee continues the use of the term depreciation. The latter is sometimes defined as meaning a mere decline in price or value, thus referring to an economic experience outside the scope of the historical accounting framework. Again, it is frequently assumed to be a wearing away of the physical properties of an asset. Actually, what the accountant has in mind, however, is that the cost of certain items should be charged against revenue on some supportable basis, because of the fact that the asset has a limited life and is believed to have contributed a service in the operation of the business. The actual limiting factor may be a number of causes other than wear and tear. It is suggested that the use of a term other than depreciation may aid in clearing the atmosphere somewhat and thus contribute to a better grasp of what the accountant is attempting to accomplish.

GENERAL STATEMENT AS RESPECTS THE TERMS CRITICIZED

If objection be raised on the basis that the terms criticized in this and the previous sections have long been used in the sense in which the Committee has used them, it may be answered that they have also probably been misinterpreted over the same length of time. Whether one should insist upon the right to define one's own terms, or should use other terms that are less likely to be misinterpreted is a problem involving the wisdom of procedure. The decision should, however, be influenced by the fact that accounting has a message to convey and a duty to perform; its function is to serve.

THE BASIC ASSUMPTION, THE PRINCIPLES, THE COMMENT

(1) The basic assumption presents a fundamental desideratum. That it must be interpreted to mean that one must accept or restrict oneself to the historical thesis in order to achieve "a unified and coördinated body of accounting theory" is a matter for debate. It would appear that all of the ends mentioned could be achieved by subscribing to some other thesis. There are those, too, who would deny, and, I believe, with considerable logic, that historical accounting accomplishes the ends set forth as desirable. One might well expect the basic assumption to contain a much more specific statement as respects the relation between accounting and the historical thesis.

(2) In the general Principle A there is a statement to the effect that at dates subsequent to the date of acquisition the fac-

tors of production and other resources are to be measured by cost incurred or amount invested after taking into account the effects of operation and other subsequent events. What other events? A decline in market value? Presumably not, for Principle A-7 states that "Values other than costs applicable to future periods should be treated in balance sheets as supplementary data . . . ." But, if Principle A-7 means what it says, why the need for Principle B-6 denying the fact that appreciation represents realized revenue? For emphasis, perhaps. If this is the answer, then it may be said that the use of depreciated market values has been much more widespread than the use of appreciated market values. Opposition to its continued use would therefore appear to call for the greater emphasis. Certainly, it ought not be permitted to remain hidden under a bushel.

(3) Principle A-1 states that "Where productive factors or other resources are acquired by donation or some similar process, fair market value at the date of acquisition, carefully determined in the light of all available evidence, becomes the basic measure." It would seem that this statement should have been placed in the basic principle heading this section. Certainly, the basic principle is not complete without it. The second statement of Principle A-1 is of greater importance than the first statement of Principle A-1. The latter is explanatory only; it merely elaborates. The former adds something new.

(4) Principle A-2 states that "The total cost of the several classes of assets acquired by a lump-sum payment should be distributed after careful consideration of the nature and condition of each unit of property, intended use and prospective earning power, and other pertinent data." Obviously this procedure is also applicable to lump-sum amounts or items invested and to lump-sum amounts or properties acquired by donation.

(5) In Principle A-4 the statement that "in the case of resources to be continued in use or held for sale only such portion of their costs as may reasonably be assigned to future periods should be carried in the balance sheet" is a repetition (and perhaps elaboration) of the statement in Principle A-3 that "For each accounting period there must be a determination of . . . the amount of cost which is reasonably applicable to future operations."

(6) Principle A-7, that "Values other than costs applicable to future periods should be treated in balance sheets as supplementary data . . . ," is hardly to be taken at face value. Principle A-4 informs us that the "Costs of productive factors or other resources which are no longer useful should be reduced to *realizable value*." The main section under A states that "Factors of production and other resources of an enterprise are measured at the date of acquisition by costs incurred or *amounts invested*." Principle A-1 states that "Where productive factors or other resources are acquired by donation or some similar process *fair market value* at the date of acquisition, carefully determined in the light of all available evidence, becomes the basic measure." But the Committee nowhere identifies cost with the implied concept of "realizable value," "amounts invested" or "fair market value."

(7) Principle A-8 appears to be modified by Principle B-1. Adjustments, apparently, must be made for items that will reduce the resources of Principle A-8 to a collectibility basis. Is it the realizable cash value of the product sold that is the cost of the assets acquired (the cash capable of being realized), the amount expected to be realized, or something else? There is a nice problem for the Committee here.

(8) The comment at the close of Section A states that "A marked change in the value of money might impair the usefulness of cost records; however, such changes

in price levels as have occurred in this country during the last half century have afforded insufficient reason for the adjustment of values." One wonders if the Committee is serious. How much of a change does the Committee believe to be necessary before cost records are invalidated? According to Snyder's Index-Number Series the general price level rose from 71 in July 1897 to 100 in January 1913 and to 199 in June 1920.

(9) The general principle in Section B, that "Revenue is measured by the realizable value, on a cash or equivalent basis, of the product of the enterprise, either goods or services," is not the whole truth. Principle B-3 provides that "In the case of interest, rent, royalties and related forms of contractual revenues recognition on a strict accrual basis (Writer's note: During the interval of the fiscal period recognition is frequently on a cash basis) in accordance with the condition of the contract, is preferred practice" and Principle B-7 adds that "Revenue may be realized through the sale of resources not to be classed as product." The revenue of B-3 and B-7, of course, is not to be measured as stated in the main principle, "by the realizable value, on a cash or equivalent basis, of the product of the enterprise . . . ."

(10) Principle B-5 states that "Discovery value, timber growth, and other forms of accretion are generally not to be recognized as realized revenue." Principle B-6 states that "Appreciation or enhancement resulting from changing market prices of existing units of property does not represent realized revenue." It would be interesting to know whether the Committee would approve of their recognition as the basis for recording unrealized revenue in the accounts proper. Principle A-7 would appear to answer this inquiry in the negative. If that is the case then A-7 would certainly deny that the items mentioned in B-5 and B-6 could constitute a proper basis for the recognition of realized revenue. On the other hand, it has been shown previously that the Committee apprently approves of exceptions to A-7.

(11) The general principle of Section C states that "Income is measured by matching revenues realized against costs consumed or expired, in accordance with the cost principle." This, apparently, is not the whole story since the comment at the end of Section C states that the limitations indicated in the principles of Section C "do not apply to operating reserves created by means of carefully determined charges to, current operations." Nowhere, however do the principles, except possibly indirectly in the statement in C-3 to the effect that income and profits taxes should be shown in other sections of the income statement, state that such reserves may be established so that the charges may be levied against revenue. In fact, the principles would appear to deny the propriety of recognizing such items.

(12) The general principle of Section C provides that the income statement of any one year "should reflect all realized revenues, and all costs and losses written off during the year, whether or not they have resulted from ordinary operations." Does this not violate the integrity of the fiscal-period principle? Does it not also support the conclusion, since the income of previous periods is not to be thought of as being adjusted subsequent to its being closed into surplus, that the final result presented by any income statement is the final word as respects all of the influences accruing up to that date?

(13) Principle C-3 provides for the presentation of interest on borrowed money but says nothing about interest income.

(14) Principle C-4 states that "Income should not be distorted or artificially stabilized by creating arbitrary reserves either by appropriating income or surplus or by overstating expenses . . . ." Distorted ac-

cording to whose opinion? The Committee's or that of the maker of the statement? When is income artificially stabilized? When are expenses overstated? Does one have to know and agree with the Committee's principles before deciding?

(15) Section D-1 provides that paid-in capital "may be increased by credits from the reissue of shares reacquired, and transfers from earned surplus to capital-stock account by means of stock dividends, recapitalization, or otherwise" but says nothing about the simple situation of merely issuing additional amounts of authorized stock. Or, is this a recapitalization (Some authorities state not.[3])? Perhaps, it is coered by the "or otherwise."

(16) Section D-4 states that "A reduction of the par or stated value of capital stock for the purpose of absorbing a deficit should be approved by stockholders, and earned surplus thereafter should be so labeled as to indicate that it dates from the time the deficit was eliminated." Whether such a reduction in the par or stated value of the capital stock should be approved by the stockholders would not seem to be a matter rightly included within the realm of accounting theory. If the state law or the corporate charter should provide otherwise, that would appear to be the controlling factor. Such a step is a matter of corporate procedure, not a matter of accounting. The basic assumption seemed to imply that it is the purpose of the principles to set forth "a unified and coördinated body of accounting theory."

In the second place Principle D-4 does not appear to require the dating of surplus subsequent to the date of charging a deficit against paid-in surplus. What is there about par or stated value that the adjustment of either for the purpose of absorbing a deficit should require the dating of a subsequent earned surplus, while the charging of a deficit against paid-in surplus does not require such a subsequent dating? If the motivation for the dating procedure rests in the idea that the deficit should normally be "absorbed" by subsequent positive earned surplus amounts, then it should be pointed out that the Committee (Principle D-1) has stated that both capital stock and paid-in surplus are paid-in capital. What is the difference between capital stock and paid-in surplus? Both may originate in the same source. Perhaps the Committee was influenced by the fact that a reduction in par or stated value may be classified as a recapitalization. If so, is this sufficient to justify the above discrimination?

(17) Principle D-2 states that "Earned surplus should contain no credits from transactions in the company's own stock or transfers from paid-in capital accounts." Principle D-7 states that "The outlay for reacquired shares of capital stock, provided the shares are reissuable, should be shown on the balance sheet as an unallocated reduction of capital stock and surplus . . . ." Principle D-7 further states that "The excess of the reissue price of reacquired shares over their cost is paid-in capital." (Only the excess is paid-in capital.) Suppose that a corporation reacquires a certain number of its shares of stock at an amount equal to their book value, $120 (par value, $100), that the corporation has no capital surplus, and that it is intended subsequently to reissue the stock. The "acquisition price" is an ***unallocated reduction*** of capital stock and surplus. Note that although the "acquisition price" is unallocated it is nevertheless a ***reduction***. How does the unallocated reduction reduce capital and surplus? Presumably in the same manner as if the stock were not to be reissued. Here Principle D-7 is of assistance in that it provides that "If the shares are not reissuable, or if they acquire the status of unissued or retired

[3] Burtchett, F. E., *Corporation Finance*, p. 840, note #10.

shares, such outlay should be charged to capital-stock account up to the amount by which capital has been formally reduced; the balance remaining should be charged to paid-in surplus, if any, up to an amount not in excess of the prorata portion of the paid-in surplus applicable to that number of shares; any part of the outlay which cannot thus be absorbed should be charged to earned surplus as constituting a distribution thereof." It would seem to follow, therefore, that an unallocated reduction *reduces* earned surplus to the extent of the amount of the outlay in excess of the sum of the capital stock reduction and the prorata capital surplus reduction—in the present illustration by the amount of $20. (Note again that although the earned surplus reduction is unallocated, earned surplus is nevertheless reduced. Otherwise what does the term reduction mean?) To this extent, earned surplus is "distributed," as much so as when the reacquired stock is actually retired. If this is true, and the logic would appear to be inescapable, it follows that when reacquired stock is reissued and only the excess above the "acquisition price" is credited to capital surplus, an amount equal to the unallocated reduction applicable to earned surplus is indirectly credited to earned surplus. This would appear to violate D-2 which states that "Earned surplus should include no credits from transactions in the company's own stock . . . ." Can it be that the Committee intended that D-2 should apply only to direct credits? Or, can it be that the Committee intended that a principle may be violated through the expedient of using a contra account? If the latter is the case, then D-3 which states that "Reserves set aside to indicate the manner in which profits have been invested or to reflect contingencies are subdivisions of earned surplus and should not be used for the absorption of expenses or losses, or for the writedown of tangible or intangible assets" may also conveniently be avoided by charging the expenses, losses and write-downs to contra accounts to the reserves and not to the reserves themselves. Such a procedure opens up a host of possibilities. Mr. Committee, are unallocated reductions, reductions recorded in contra accounts, reductions or not? If they are, will you change the last statement in D-2, or will you change D-7?

(18) One final parting shot. In the prefatory note the Committee states that "So many vital decisions of business and government depend on the interpretation of such statements (accounting statements) that they have come to be of prime economic and social significance." In their article on "Accounting, Reports to Stockholders, and the S.E.C."[3] Kaplan and Reaugh state that "The balance sheet is a highly technical document . . . of relatively small value to those who buy or sell securities,"[4] that "The accountant's function in a business enterprise is the rather narrow one of reflecting the interests of the owners and management"[5] and " . . . accounting rules designed to serve the interests of management in private business may reflect, inadequately and unfairly, the interests of employees, consumers, and the public in the enterprise . . . ."[6] Keynes holds that one of the causes of the maladjusted economic conditions existing in the world from 1929 on rests in the fact that businessmen are accounting minded rather than truly socially minded. MacNeal holds to the " . . . conclusion that the great majority of contemporary certified financial statements must necessarily be untrue and misleading due to the unsound principles upon which modern accounting methods are based."[7] In his article on "The Influence of Accounting in the Development of

[3] ACCOUNTING REVIEW, Sept. 1939.
[4] *Ibid.*, p. 205.
[5] *Ibid.*, p. 207.
[6] *Ibid.*, p. 235.
[7] *Truth in Accounting*, p. VIII.

an Economy"[8] May credits much of the rapid development of our economy to a possibly false application of accounting principles. Take your pick, O Reader, and go your way rejoicing for "you are right if you think you are." Personally, it is my opinion that historical accounting is a *sine qua non* of business procedure and that all efforts to improve it are worthy of commendation. To a considerable extent, historical accounting meets the requirements of income-tax procedure; it keeps proper records of the relations between the business and its customers and creditors; to a considerable extent it accounts for the manner in which hired servants perform the duties of their stewardship; it depicts the success or failure of original owners. I should like to see accounting expand its serviceability, however, by broadening the scope of the activities. By so doing I believe that it can become truly worthy of the Committee's assumption that it is of "prime economic and social significance."

CONCLUSION

Possibly, many of the criticisms presented above are ill-founded. If so, although that prayer wherein we do all pray for deeds of mercy doth teach us also to render deeds of mercy, I nevertheless pray for mercy in spite of the fact that I have seen fit to grant none. Perhaps to some it will appear that certain of the criticisms are picayune and that I have been too severe. Remember, however, that we are concerned with a basic document of the greatest fundamental importance. In a sense it may be called the charter or constitution of accounting procedure. To the extent that it is faulty, it fails to be of assistance. No criticism, therefore, if correct, is either too picayune or too severe, since it should contribute to the attainment of that perfection to which worthy workmen should aspire. In fairness to the reader, the Committee, and myself I should state that some of the criticisms set forth above were presented to the Committee prior to the completion of the revised statement and were rejected. The Committee has its own reasons for placing the statement of principles in the form in which it appears. My desire in writing this is to place my criticisms in the broader record of the literature of the field and to submit them to minds outside of those possessed by the Committee. Some of the criticisms, notably the one presented in item #14 above, were submitted in a previous article written for THE ACCOUNTING REVIEW (December 1937).

[8] "It has been said that we owe our great railroad facilities and the developments which they made possible, in a large measure to unsound finance; but if it be held that depreciation provisions are an essential element of sound railroad accounting, then unsound accounting must share with unsound finance in the responsibility for the tremendous economic development that has taken place since railroad enterprises were first begun." *Journal of Accountancy*, March 1937, p. 175.

ACCOUNTING THROUGH INCOME OR SURPLUS

HENRY SERLIN

TWO BASIC statements have been developed in accounting to disclose the financial structure of an enterprise: the balance sheet which reflects the condition of a company at a given date and the operating statement covering transactions of a certain period. The balance sheet offers a more static picture confined to a particular moment, whereas the profit-and-loss statement is of a more dynamic nature indicating changes which have occurred over a certain length of time. In dealing with accounting problems, different opinions of authorities have been explained as the result of a "balance-sheet" viewpoint or a "profit-and-loss" viewpoint, implying a fundamental difference in approach.[1] But the profit-and-loss statement and the balance sheet are closely linked by the fact that the result of the operations of a fiscal period, determined in the income statement, is transferred to the balance-sheet account, earned surplus. The balance sheet emphasizes the amount of surplus; the operating statement gives information as to the source of surplus and the reason of changes therein.[2] In other words, the income statement serves the special purpose to present in more or less standardized form an analysis and explanation of changes in the earned-surplus account.[3]

Interpreting the operating statement as a statement of income from normal operations of a fiscal period, it is possible that certain items may never appear in any operating statement either because they are not considered income from normal operations or because they are not conceived as income of this period. Consequently some authorities[4] recommend in these cases accounting through surplus adjustments, whereas others,[5] widening the interpretation of income, advocate that all gains and losses whether usual or unusual should be reflected in the profit-and-loss account, either for the year in which they occur or for the year in which they first are recognized as having occurred. In discussing this controversial question it will be my attempt to present with a critical eye the different viewpoints which have been advanced, to explain these differences, and to analyze the approaches which have been used by the various authorities.

SURPLUS POINT OF VIEW

Following the historical order in which opinions with regard to this problem have developed, a school of thought which might properly be understood as advocating a "surplus viewpoint," will be considered first. A number of authors try to determine those items which may properly be carried directly to surplus and not first to the income statement by an examination of the items themselves.

One of the principles upon which they base their distinction is, that any charge or credit which is not applicable to the period under review should be carried directly to

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[1] York, "Relation of the Income Statement to the Balance Sheet and Earned Surplus Analysis", *Journal of Accountancy*, January, 1941, p. 43.

[2] Hosmer, "The Effect of Direct Charges to Surplus on the Measurement of Income", ACCOUNTING REVIEW, March, 1938, p. 31.

[3] York, *op. cit.*, p. 43.

[4] Sanders, Hatfield, and Moore, *A Statement of Accounting Principles*, American Institute of Accountants, 1938, p. 40

[5] Paton and Littleton, *An Introduction to Corporate Accounting Standards*, Amerian Accounting Association, 1940, p. 102.

surplus.[6] This presupposes that a reasonably clear line can be drawn between charges and credits applicable to the present and other periods. In general this distinction can be made on the basis of familiar principles of accruals, but in some instances the method may lead to unsatisfactory results. When, for instance, intangibles, not ordinarily subject to amortization, are written off, it will be difficult to assign any portion to a particular year. Furthermore other difficulties may arise which make the feasibility of adopting the outlined principle doubtful. Taking the common example of charging off insufficient annual depreciation, a large amount may have to be absorbed at the time of retirement of the asset. This will have to be done by a surplus adjustment because the amount of underdepreciation is not applicable to the period under consideration. Under a principle which permits charging to surplus amounts not applicable to the period under review, it is possible to increase reported net income by keeping depreciation expense at a low figure and absorbing losses later as direct surplus charges.[7] In general terms it may be said that large items may be removed entirely from income determination and not be charged as expense of any period, because they were not set up at the time where they should have been accounted for, and are not applicable to the period under review. Thus, serious distortions of income become possible.

Other adherents of accounting directly through surplus in specific cases, base their distinction on the principle of "ordinary or extraordinary items."[8] Whereas ordinary items are reported in the income statement, extraordinary or nonrecurring items are carried directly to surplus. This principle is an extension of the first one mentioned. All items which are not applicable to a period may be considered as extraordinary. But in addition to that certain items of a fiscal period under review may be classified as extraordinary. The distinction between recurring and nonrecurring items is indefinite and tenuous in specific cases, and this objection will have to be added to the ones previously made.

Finally it has been advocated that "capital gains or losses" should be carried to surplus rather than to income.[9] A capital gain may be defined as "profit upon realization of assets otherwise than in the ordinary course of business, this profit being the excess of the proceeds of realization over the cost of the property realized."[10] In this definition the close relationship between this principle and the previous one based on the distinction of recurring and nonrecurring gains and losses becomes apparent.[11] However, it seems to be somewhat narrower in scope, limiting the adjustments through surplus to "capital items." In the view of proponents of this principle there is a marked distinction between regular income from trading, or from interest and rent and an "extraordinary capital gain" which merely has been realized in a certain year.[12] Against this theory it has been held[13] that the term capital asset can hardly be used as a synonym for fixed assets, since current assets are as much "capital" (in the sense either of economic goods or of funds invested) as are fixed assets. Taking a loss on a fixed asset as an example it is said that this brings about a shrinkage of capital no more surely than does a loss of current assets. In the view of this school of thought it is difficult

[6] Sanders, Comments on the Statement of Acctg. Principles, ACCOUNTING REVIEW, 1937, p. 77.
[7] Hosmer, *op. cit.*, p. 44.
[8] York, *op. cit.*, p. 47.

[9] Sanders, *op. cit.*, p. 77.
[10] May, *Journal of Accountancy*, November, 1922, p. 32.
[11] See Smith, "Capital Gains and Losses in Accounting," ACCOUNTING REVIEW, June, 1939, p. 127.
[12] Smith, *op. cit.*, p. 127.
[13] Paton, *op. cit.*, p. 101.

to see how one kind of asset loss has any more justification for being called a "capital loss" than any other kind of asset loss. But even accepting the theory of the distinction between capital gains or losses and others, a clear separation from ordinary recurring income and expenses will be rather difficult. If plant, a "capital" investment is sold for less than its book value or is written down, the nature of the loss is doubtful. There is an interrelation between such losses and expenses, because if depreciation had been charged at higher rates the write-off would have been less. It would be quite possible under this theory to increase the income reported by using low depreciation rates and recording intermittent plant write-downs as capital losses.[14] Similarly, in the case of investment portfolios, losses or gains resulting from changes in the price of securities might be classified as of a capital nature and therefore, not as a part of the expense or income of the period.[15]

Before turning to the theories which were the result of the criticism against the "surplus-viewpoint school" the conception of the income statement in the minds of surplus-viewpoint adherents will have to be presented to obtain a complete picture. Those who maintain that adjustments for prior years and capital gains or losses should be absorbed through a statement of surplus define the function of the income statement as to reflect the results of the year's operation as truly as possible.[16] In other words, the statement indicates in their opinion the income attributable to a period. Those who put the emphasis on carrying "extraordinary" items directly to surplus see in the income statement a disclosure of ordinary income. Since ordinary income figures over a period of years may be helpful in determining the earning power of a particular firm, some authors see the chief usefulness of the income statement in the aid it can furnish in estimating future income.[17]

INCOME VIEWPOINT

The basic difficulties of the various presented surplus viewpoint theories may be seen in the fact that 1) the criteria for a distinction between income and surplus charges and credits leave too much room for interpretation and lead to vague results, and 2) that large surplus adjustments may seriously distort the reported income. The first criticism is reflected in a view which conceives surplus as the "dumping ground for certain charges, a definite classification of which is not attempted."[18] The second criticism finds its expression in the statement that "restricting the income statement to reporting recurrent costs and revenues drives other factors affecting earnings—often of marked importance—into the obscurity of surplus adjustments."[19] To avoid these difficulties it has been suggested by the Executive Committee of the American Accounting Association that "the income statement for any given period should reflect all revenues properly given accounting recognition and all costs written off during the period, regardless of whether or not they are the result of operations in that period: to the end that for any period of years in the history of the enterprise the assembled income statements will express completely all gains and losses."[20] This proposal is based on the premises that the income statement of a year is an historical report, and that it is to be purely a history of what has happened, it must be a complete his-

[14] Hosmer, *op. cit.*, p. 45.
[15] Hosmer, *ibid.*
[16] Kerrigan, "Criticism of the Tentative Statement of Accounting Principles," Accounting Review, March, 1941, p. 56.

[17] Robinson, *Journal of Accountancy*, 1939, p. 77; Frank, *ibid.*, pp. 298–300.
[18] York, *op. cit.*, p. 46.
[19] Paton, *op. cit.*, p. 99.
[20] "A Tentative Statement of Accounting Principles Affecting Corporate Reports," Accounting Review, 1936, pp. 187–191.

tory. The advantage of this method is that income reported does not depend to so great an extent upon difficult distinctions between items applicable to one period or others, or between capital or other gains and losses. Income is no longer subject to varying interpretations but "net income" in accounting according to this principle means the change in proprietorship in any period from all causes other than new investment by proprietors or distribution to proprietors and includes non-operating charges and extraordinary items regardless of size and regardless of the period to which they refer.[21]

This point of view eliminates the undesirable result of surplus-viewpoint theories under which substantial amounts may be absorbed in surplus and never appear as a charge against income in any period.

The extreme "income viewpoint" of the Tentative Statement, however, is modified by those authors who feel that there may be adjustments or losses so large in amount as to preclude their inclusion in the income statement of any year. One writer[22] suggests therefore that the requirement of showing the entire income history for a period of years be so modified as to permit a breaking of the historical continuity through the medium of an "accounting reorganization." Thinking of an analogy to a legal reorganization this writer apparently wants to limit the historical continuity to the time after a large adjustment has been made. Another author[23] simply advocates adjustments through surplus.

The principles brought forward in the Tentative Statement have been criticized for various reasons.[24] It has been said that the proposal oversimplifies a highly complex problem. It bears some evidence of deductive reasoning from premises in the theory of accounting rather than inductive reasoning by study of actual cases.[25] This critic thinks in particular of the $270,000,000 adjustment of the U. S. Steel Corporation which would have resulted in an enormous net loss if the adjustment had been made through the income statement, and the author feels that in such cases an inclusion into the profit-and-loss statement would distort income. Thus, he concludes that to the extent that the problem is oversimplified the principle is weakened as a guide of action.

A second criticism against the sweeping proposal of the Tentative Statement is that the principle is too rigid; it does not allow sufficient flexibility in meeting changing conditions confronted by an enterprise.

Finally the same author concludes that adherence to the principle results in but a partial solution of the problem, which is to measure the income attributable to a period. Simply to load the income statement of a period with all charges and credits taken up in that period would not add to the accuracy of measuring the income of that period.[26]

A critical analysis of these objections can only be made after valid approaches have been found to come to a satisfactory solution of the problem. To accept the criticism as it stands would lead back in many cases to surplus adjustments and would result in the same difficulties which have been treated in connection with the surplus viewpoint.

APPROACHES TO A SOLUTION

The first question which suggests itself and which may help in determining an approach to the problem is how these two entirely different schools of thought could

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[21] Hosmer, *op. cit.*, p. 47.
[22] Dohr, "The Revenue and Income Principles," Accounting Review, January 1942, p. 25.
[23] Stempf, "A Critique of the Tentative Statement," Accounting Review 1938, p. 61.
[24] Mautz, "Revising the Tentative Statement," Accounting Review March, 1941, p. 69.

[25] Hosmer, *op. cit.*, p. 49.
[26] Hosmer, *op. cit.*, p. 50.

develop. The history of accounting may furnish us a part answer. American accounting was originally carried on by British practitioners and therefore was subject to British tradition and influence.[27] Broadly speaking the "surplus viewpoint" may be identified with English thinking, whereas the income viewpoint school represents modern American thought. There is a marked difference between British and American popular concepts of capital and income which may explain the different accounting methods. The British generally look upon capital as something to use in producing income; an American looks upon capital as something to be increased.[28] In America we say a person is worth so many dollars (wealth) but in England he is worth so many annual pounds (income). It has been said that in the U. S. we think in terms of capital value while the British think in terms of annual income.[29] The natural outgrowth of the British conception is that the profit-and-loss statement should only show the results of ordinary operations for the year. Any extraordinary gains or losses or transactions in capital assets are entirely distinct from the profits for the year.[30] In a young and expanding country as the United States great opportunities were offered to enterprising individuals in appropriating or trading in capital assets. Business methods were less conservative and not as slow-moving as in England, and property changed hands more easily. Therefore it has been natural here for the popular conception of income to include capital gains, and American courts have repeatedly refused to make any distinction between capital gains and other profits so long as they were realized.[31]

Using the historical approach, an argument in favor of the income viewpoint school may be seen, because accounting in America should be based on American concepts and conditions, not on conditions or traditions elsewhere. But a sound judgment of the problem will have to take accounting principles into consideration, and the criterion of history alone is not enough to form an adequate opinion.

It has been argued that the decision of whether certain items should be included in the income statement or should be carried directly to surplus is "a matter to be determined by sound business judgment, made upon all the facts of the particular case and guided by the principle of conservatism.[32] Another author[33] thinks that the question comes down to a "nice balancing on the basis of informed judgment" and finally it has been suggested that the decision depends in the last analysis on which procedure, over a term of years and in view of all the interests affected, will give the soundest and most accurate record of the results achieved in the conduct of a business. In other words, the policy of a corporation should depend on the effects of that policy on the interests of all persons and groups concerned.[34]

The common denominator in these three viewpoints is that the decision has to rest on the individual case and will be made on the basis of individual judgment. This raises the fundamental question of whether the individual opinion or a uniform rule should be the principle on which accounting methods should be based. The importance of this problem has been recognized by one author[35] who understands the two possible ways as the common-law approach as opposed to the civil-law approach. Whereas under the former a decision is reached by a consideration of

[27] Smith, *op. cit.*, p. 131.
[28] *Ibid.*, p. 132.
[29] May, "Capital Value and annual Income," *Journal of Accountancy*, February, 1936, p. 92.
[30] Rowland, *Principles of Accounting* (1934), p. 92.
[31] Smith, *op. cit.*, p. 133.
[32] Sanders, Hatfield and Moore, *op. cit.*, p. 38.
[33] Dohr, *op. cit.*, p. 27.
[34] Hosmer, *op. cit.*, p. 54.
[35] Dohr, *op. cit.*, pp. 19–21.

specific facts of an individual case and may be used as a precedent in a similar situation later on, the civil law constructs a system of rules that cover the entire filed.

In our particular case the surplus viewpoint can be identified with the common-law way of thinking, whereas the income viewpoint, claiming categorically that all gains and losses should be reflected in the income statement resembles more the civil-law approach. According to Dohr[36] each method has its advantages and disadvantages. The code system has the appeal of symmetry and completeness, but it runs the risk of ignoring the consequences of its rules as applied in specific factual situations. The common-law method on the other hand is more apt to be closely related to specific facts and is therefore more easily applied in practice, but it runs the risk of failure in coordination.

It seems that the solution of the problem will depend on the reaction of an intelligent reader to the financial statements constructed under the different methods. In an interesting study by Greer[37] in which this problem plays its part the published financial statements of 18 corporations over a period of 9 years were taken, and all charges and credits to surplus or corresponding items which appeared in the profit-and-loss statements were analyzed. Using the most conservative possible treatment the aggregate profit of the companies would have amounted to $98,000,000, and the most liberal treatment would have resulted in an aggregate stated profit of $218,000,000. The actual profit shown by the published statements of the companies was $185,227,000. If arbitrary criteria consistently applied may lead to profit showings which differ in a ratio of more than 2:1, the necessity of uniformity in principles becomes apparent. The most intelligent reader of a statement will not know what a profit figure means if the selection of principles is left to the discretion of the individual accountant. If on the other hand uniform treatment takes the place of individual decisions of experts, a profit figure will assume a much more definite meaning. The lack of confidence in present financial statements even though audited and certified to by public accountants may be demonstrated by a statement in "The Agricultural Situation" published by the U. S. Department of Agriculture; it reads in part: "It should also be pointed out that because of differences in accounting practice as well as in the methods used by the corporations in evaluating their assets, the earning data given here cannot be used to indicate that profits in any given food industry are either reasonable or unreasonable as of a given time.[38] In other words, one cannot safely rely upon published financial statements, though they may have been audited by certified public accountants, when the principles applied differ in each case, or lead to different results.

The recognition of the paramount importance of a workable rule to obtain uniformity in income reporting will help us in refuting some of the criticism which has been advanced against the income viewpoint. As previously mentioned, some writers regarded the provision of the Tentative Statement to have the income statement reflect all gains or losses regardless of the period in which they occurred as "too rigid." But this criticism is only valid if it is accompanied by a suggestion as to what the proper qualifications ought to be.[39] Whenever uniformity of income reporting is accepted as the criterion, criticism can only lead to a refinement of the rule by another one. At least the basic principle of

[36] *Ibid.* p. 21.

[37] Greer, "Application of Accounting Rules and Standards to Financial Statements," ACCOUNTING REVIEW, December, 1938, p. 33.

[38] Greer, *op. cit.*, p. 339.

[39] Greer, *op. cit.*, p. 344.

the income viewpoint seems therefore sound.

The other objection that the Tentative Statement "oversimplifies" the problem can be met on the same grounds as the previously mentioned criticism. Against the view that such large adjustments as the $270,000,000 item of the U. S. Steel "distort" the income of a period, it may be pointed out that distortion is something which depends on the point of view. The doctrine of distortion ofthe final figure usually assumes smooth regularity to be the natural phenomenon. Yet there is just as much justification for considering irregularity of the final figure as normal in which case "smoothed regularity" would be the distortion.[40] If anything is distorted at all, it is only an ill-defined income conception, based on the "nice balancing on the basis of informed judgment."[41] This doctrine neither explains whose judgment should be taken as a guide nor when it is informed nor what nice balancing means. Considering these arguments the clearly defined income concept of the Tentative Statement cannot be regarded as distorted.

But the concept of uniformity of income reporting gives only the frame for a financial statement. It will have to be supplemented by other principles so as to make the construction of a definite form possible.

It seems that the requirement of a full disclosure[42] may be accepted as an adequate guide. In recent literature[43] it has been emphasized however, that one statement cannot possibly satisfy the divergent interests of management, creditors and investors, and a "single purpose statement" is advocated. But it seems that neither principles nor forms of such a statement are sufficiently clearly established as to use it for the construction of a statement in our case.

A full disclosure of facts will have to take the interdependence of the balance sheet and the profit-and-loss statement into consideration. Our surplus and income viewpoint theories advocating adjustments either through surplus or through the operating statement reflect the sharp distinction which is still maintained. But as has been said, "an income statement links the balance sheets as of the beginning and end of a period, and a balance sheet links the income statements of one period with that of the next."[44] Whether we accept this formulation or not, the general idea behind it, the emphasis on the close relationship between the balance sheet and the profit-and-loss statement seems valid. The logical result of this approach will be to combine the items which link the balance sheet with the income statement.

THE INTEGRATED STATEMENT

Our critical analysis of principles has led us to a form of statement which the Committee on accounting procedure of the American Institute of Accountants has developed in the Accounting Research Bulletin No. 8.[45] It is either called a "combined statement of income and earned surplus" or an "integrated statement of income and earned surplus."[46] Among the proponents of this statement two groups tending more to the income or surplus viewpoint may be distinguished. One possible form would show (1) the beginning earned surplus and the adjustments made in it on account of previous periods, (2) the income account in its present general form, followed by (3) a section displaying transfers between earned

[40] Littleton, "Integration of Income and Surplus Statements," *Journal of Accountancy*, January, 1940, p. 35.
[41] Dohr, *op. cit.*, p. 27.
[42] Broad, "The Capital Principle," ACCOUNTING REVIEW, January 1942, p. 35; Kerrigan, *op. cit.*, p. 63; Hosmer, *op. cit.*, p. 51.
[43] Brink, "Need for a "Single-Purpose Statement," *Journal of Accountancy*, April 1940.
[44] Kerrigan, *op. cit.*, p. 64.
[45] See *Journal of Accountancy*, July 1941, pp. 52–54).
[46] Littleton, *op. cit.*, p. 34.

surplus and other net-worth accounts, and finally (4) the distribution made to stockholders and the amount of the closing earned surplus.[47]

Another suggestion divides the statement into operating, income, and surplus division.[48] In this and similar proposals, particular emphasis is placed on a careful separation of the operating from the nonoperating (income) section which should include capital gains and losses and extraordinary credits and charges resulting from income realization and cost amortization not connected with the operations of that period.[49] Thus, it is apparent that in spite of the fact that the income viewpoint has been considered rigid, attempts are made to determine which part of the income applies to the period. With that, the last criticism which has been advanced against the income viewpoint—that it does not add to the accuracy of measuring the income of a period—stands refuted. It has to be admitted, however, that the differentiation between the operating and nonoperating section in the integrated statement brings up the same difficulties which the surplus viewpoint school had to face.[50] But in an integrated statement this problem loses some of its importance because wherever adjustments are made, they will appear in the same statement.

It remains to evaluate the advantages and disadvantages which will result from the use of an integrated statement. Under the surplus viewpoint certain charges or credits are made directly into earned surplus. There is a danger that unless balance sheet and income statement are closely connected such charges will be overlooked or at least not given full weight in any attempt on the part of the reader to compute a company's long run income or its income earning capacity.[51] The combined statement minimizes this disadvantage. It may further be considered superior to the income statement of the income viewpoint school because the inclusion of the item earned surplus makes a fuller disclosure possible and gives the reader of the combined statements of a company a full and continuous history of the organization without further additions or subtractions.

In emphasizing the overall result of operations, the integrated statement counteracts the tendency to exaggerate the significance of the "net income" for a single year. The final figure of income statements is regarded by many people as a fully established fact. They do not know or forget that in spite of the refinement in the science of accruals and deferments the "net income" is at best a close approximation of the true result. The integrated statement by including unusual or capital gains and losses and corrections of past periods reveals the estimate character of periodical financial reports.[52]

It may further be said that the combined statement constitutes a synthesis of the two opposing theories which have been presented. Whereas under the surplus or income viewpoint theory a decision resulted in accounting through either one of two separate statements, the "integrated" solution reduced the controversy to a problem of inclusion of the item under a different heading in the same statement. It is no matter of vital concern whether an item is included in the "nonoperating" section or under the heading "surplus adjustments."

The strongest objection against the use of integrated statements has been raised on the grounds that the net income figure for the year will occur somewhere in the mid-

[47] York, *op. cit.*, p. 45.
[48] Daniels, *op. cit.*, p. 48.
[49] Tentative Statement, Principle No. 9; Hatfield, Sanders and Moore, *op. cit.*, p. 27.
[50] One author wants to classify items according to their relation to the "main operations" of a concern; see Kerrigan, *op. cit.*, p. 63.

[51] Accounting Research Bulletin No. 8
[52] Littleton, *op. cit.*, p. 34.

dle of the statement and not at the end.[53] It is claimed that the "man in the street" might use the wrong figure in capitalizing net income to determine the value of an enterprise. But more errors of judgment would probably rest upon neglect to note the significance of nonrecurring items than from possible inadvertent overemphasis in considering them.[54] The decision to invest money requires a certain intelligence, and to the intelligent reader the integrated statement will be of help because it indicates that the net income figure is not beyond recall. If the intelligence to recognize that is lacking, no better results will be obtained by the use of a nonintegrated income statement. If the investor has no basic understanding of the significance of a net-income figure or adjustments, he should better leave the interpretation of financial statements to a skilled accountant or investment analyst. For those the combined statement constitutes a convenience. The integrated statement will have to be arranged however in such a way as to make the net-income figure for the year unmistakably clear. If this is done a comparison of successive periods will be easily accomplished and comparability is not destroyed as some critics claim.

Finally it may be objected that adjustments clearly labeled as corrections may be construed as unfavorable reflection against well-intentioned management. But only errors which were conceivably avoidable by better foresight or different policies would be a reflection upon management. No one can reasonably expect management to be clairvoyant and infinitely wise.[55]

Fully aware of the fact that the integrated statement does not solve entirely satisfactorily the problem of income determination or reporting, it has to be conceived as an improvement as compared to the methods used before. This seems to be recognized in the accounting profession, because a growing number of concerns uses an integrated statement for income reporting. It has been said that integrated statements have been used in a few instances since 1912 or earlier, that a few companies began this practice between 1918 and 1924 and that among a limited number of companies 9 made such reports between 1925 and 1929 and 10 between 1930 and 1937.[56]

In a more extensive survey covering 500 corporations, the substantial use of integrated statements in 1938 and 1939 is revealed.[57]

It may be expected that because of its advantages the use of the integrated statement will increase substantially in the future.

[53] Research Bulletin No. 8.
[54] Littleton, *ibid.*

[55] Littleton, *op. cit.*, p. 34.
[56] Littleton, *ibid.*
[57] See *Journal of Accountancy*, July, 1941, p. 53.

WHAT IS A SECURITY?

RICHARD N. OWENS

THE SALE of securities was brought more firmly under the control of the Federal government by the Securities Act of 1933 which was designed to prevent fraud in the sale of securities and to require the disclosure of all material facts in connection with their sale. However, the definition of a security was not easy, for to broad a definition would have brought under the requirements of the Act many types of business transactions which were already regulated by the banking laws and other acts or which possibly did not require government control, while too narrow a definition would have enabled unscrupulous security dealers and fraudulent agents to continue their activities without restraint. This they could do by changing the form of their contracts.

By 1933 the experience of the states with their blue-sky legislation and also of Great Britain and certain other countries had disclosed many of the methods used by security swindlers in evading the law, but experience had also shown ways of finding and plugging the loopholes. In order that certain methods of evasion might be prevented and all types of investment contracts might be included within the scope of the Act, a broad definition of a security was adopted. In fact, the definition is broad enough to include such contracts as a deed to real estate or a certificate of membership in a society if such a document is used for investment purposes. The definition[1] is as follows:

"The term security means any note, stock, treasury stock, bond, debenture, evidence of indebtedness, certificate of interest or participation in any profit-sharing agreement, collateral trust certificate, preorganization certificate or subscription, transferable share, investment contract, voting-trust certificate, certificate of deposit for a security, fractional undivided interest in oil, gas, or mineral rights, or in general any interest or instrument commonly known as a security, or any certificate of interest or participation in, temporary or interim certificate for, receipt of, guarantee of, warrant or right to subscribe to or purchase, any of the foregoing."

The effect of this broad definition is somewhat limited by certain specific exemptions. One of the most significant of these is "any note, draft, bill of exchange, or bankers' acceptance which arises out of a current transaction or the proceeds of which have been or are to be used for current transactions, and which has a maturity at the time of issuance of not exceeding nine months."[2]

In the enforcement of the provisions of the Securities Act, the use of a wide variety of types of instruments and contracts has been disclosed. Many of these instruments are of old and familiar types, while some appear to have been expressly designed in an attempt at evasion of the law. The illustrations cited here are those which have been considered in cases arising under the Securities Act and decided by the courts. Most of them have been reported only in releases of the Securities and Exchange Commission.

Among the more common instruments which have been held to be securities are certificates in a trust estate.[3] Such certificates, though legally very different from corporate stock, are in practical effect very similar to shares of stock. The trust is not incorporated, but the shares are transfera-

[1] Sec. 2(1).

[2] Sec. 3 (a) (3).

[3] Release No. 2792, March 6, 1942. All releases referred to in this paper are Securities Act releases.

ble and the holders of the shares look upon their holdings as investments. The trust, sometimes designated as a business trust, Massachusetts trust, or common law trust, is in many other respects, especially for tax purposes, treated at law as a corporation.

If the stockholders of a corporation permit of a voluntary assessment on their stock, the receipts for monies paid may be considered as securities.[4] Similarly, a corporation which before maturity date of its outstanding convertible certificates offered the certificate holders new certificates with a new maturity date, was held to have issued new securities.[5] This was true even though new certificates were not issued but the terms of the agreement extending the maturity date were stamped on the face of the old certificates. This stamped certificate, said the court, "serves all of the purposes of the old bond or debenture and is a security."

Another widely used investment medium is an interest in a lease on property alleged to contain oil, gas, or other minerals. Where such certificates are sold, the investors supply the funds to do the drilling, the prospecting, or the developing, and each investor receives a certificate representing a fractional undivided interest in the lease. The profit from the operation of the well or mine is expected to repay the investor for the use of his funds. Even though such ventures are not incorporated the fractional interests are uniformly held to be securities.[6]

Personal loans to individuals have been held to be securities where a large number of such notes were issued and the maturities were not of an early date.[7] In these cases the loans were ostensibly made to the officers of the company, though actually the loans were to the corporation. Needless to say, in cases where such notes were not registered under the Securities Act and the Commission found it necessary to take legal action, the notes were fraudulent and involved the purchasers in losses.

A more ingenious device is that of offering to the public a chance to speculate in the grain or securities markets by depositing funds with the person who manages a speculation. In such cases, the person claiming to have a certain skill in interpreting trends in the market solicits funds and issues to each contributor a contract under whose terms the earnings on the money supplied are to be divided in a certain ratio. The contract also provides that losses are to be sustained solely by the purchaser of the contract. The funds supplied by the various purchasers are commingled in one or more bank accounts in the name of the manager of the speculation. Such contracts are securities within the meaning of the Securities Act and are subject to its registration requirements.[8]

An even more ingenious type of contract is illustrated by the "purchase and ranching agreements" executed by a fur farm. These contracts provided for the purchase and sale of a pair of foxes and for the ranching of the foxes at a fur farm.[9] When the contracts were first used, they provided that the foxes would be pooled in units and that the proceeds from the sale of the offspring of each group of foxes would be distributed pro rata among the purchasers of the foxes. As a further refinement, however, the later contracts provided that the foxes would be ranched at a designated cost per year and that the farm would provide tattoo identification for the foxes purchased and would furnish to each

[4] Release 1993, June 22, 1939.

[5] *S.E.C. v. Associated Gas and Electric Co.* 24 Fed. Supp. 899 (1938). Affirmed in 99 Fed. (2d) 795 (1938).

[6] Release 1898, Feb. 23, 1939; Release 2045, Aug. 30, 1939; Release 2391, Nov. 9, 1940; Release 2684, Oct. 8, 1941; Release 2682, Oct. 7, 1941.

[7] Release 2367, Oct. 3, 1940; Release 2273, June 5, 1940.

[8] Release 2186. Feb. 21, 1940; Release 2208, March 13, 1940; Release 2762, Jan. 19, 1942. Also *S.E.C. v. Wickham*, 12 Fed. Supp. 245 (1935).

[9] Release 2399, Nov. 20, 1940.

purchaser the serial number of the pen in which the purchaser's foxes would be kept. They also provided thta the purchaser might have actual delivery of his foxes upon payment of the accrued charges. The fur farm agreed to sell the offspring or pelts produced by each pair of foxes and to pay the purchaser of the contract the proceeds of sales less ranching costs and the expenses of sale. The fur farm further guaranteed that each purchaser's foxes would produce during the year following the date of the agreement a minimum of three pups per year and that if this number of pups was not produced the fur farm would supply sufficient pups to make up the minimum. It also agreed to replace all losses of breeding foxes due to death, theft, or escape.

Although the fox-ranching agreements were in form contracts for sale and ranching of foxes, the court[10] held that they were regarded by the contracting parties as investments and were in fact securities. The court pointed out that the purchasers of the foxes were not hoping by their own efforts to better themselves by managing the foxes but that they hoped for a certain sum of money to become part of a business venture in which they were to receive a share in the profits. They were investors because the transaction contemplated the conduct of a business enterprise by others than the purchasers with the purchasers sharing only in the profits. While the contract of sale granted the purchaser the right to take actual delivery of the foxes, the purchaser did not enter into the venture with the idea of taking possession of the foxes and in fact no purchaser ever asked for delivery. Moreover, the literature used in soliciting contracts stressed the facilities of the ranch and the experience of the men in charge, thus implying that the successful breeding of foxes required equipment and skill which the purchasers of the contracts could not hope to acquire. Of further significance was the fact that it was not necessary for a purchaser to buy a pair of foxes but that he could buy only one fox if he so desired. Since the contract was actually an investment medium, it was a security.

Other contracts providing for the sale of a share of the profits of a business which have been held to be securities include contracts entitling the purchaser to a participation in profits accruing or expected to accrue from the exploitation of patents on fabricated steel, bullet-proof armor, and other patents.[11] Also agreements whereby a person contracted to pay the "unit holders" supplying the funds fifty cents for each barrel of oysters harvested and sold, have been held to be securities.[12] Whisky warehouse receipts, sold under the name of "Income and Resale Contracts," and promising that the purchasers would receive an income of $1 per month for every barrel of whiskey covered by the receipts, have been held to be securities.[13] Contracts for the sale of oil where the intent was not to deliver oil but to pay the cash proceeds of the sale of oil to others, are another variation of this type of contract.[14] Still pending is an indictment against a number of individuals for making contracts for the sale of automatic vending machines without registering the contracts under the Securities Act.[15] These agreements contained clauses providing for lease-back arrangements under which the original owners would place the machines on location and pay twenty per cent of the gross income or not less than $5.00 per machine each month to the investor.

The sale of securities has also been dis-

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[10] District Court, Southern District, New York.

[11] Release No. 2189, Feb. 24, 1940.
[12] District Court, Southern District of Florida, May, 1936 (unreported).
[13] Release 2778, Feb. 12, 1942.
[14] *S.E.C. v. Crude Oil Corporation of America*, 17 Fed. Supp. 164 (1936).
[15] Release 2779, Feb. 4, 1942.

guised as memberships in a society which in turn agreed to use the membership fees in profitable enterprise.[16] To illustrate, the Universal Order of Plenocrats solicited memberships to procure funds for the operation of farms. The society represented to its prospective members that all chance, risk, and loss were eliminated under its system and that a thirty per cent annual increase was not too much to expect. Members in the Association were to pay either lump sum contributions ranging from $100 to $6,000 or monthly contributions of $1 to $25 for a period of five years. After an injunction had been issued prohibiting further solicitations of memberships, sales of such securities were continued under the guise of "Applications for Demonstrations in Nature." These contracts were also held to be securities.

Another attempt to conceal the nature of the securities transaction was through the sale of "ship shares," constituting interests in certain fishing vessels. Each share was sold at $1,000, and pending the construction of new boats, the prospective purchasers were offered temporary interests or shares in existing ships in order that they might receive an immediate return on their investments.[17] The defendants alleged that the interests could not be considered securities because first, the securities Act, in its definition of a security, does not mention ship shares, second, no instruments evidenced the shares in the boats to be built, and third, the transaction was only a sale of property since the contract was the ordinary bill of sale as prepared by the Bureau of Marine Inspection and Navigation. The court,[18] in holding that the ship shares were securities, pointed out that the shares carried with them the right to the receipt of profits by the prospective purchasers through efforts other than their own and involved the investment of money with the expectation of profits through the efforts of other persons.

Sometimes a contract which is in form a sale of real estate may constitute a security. Cemetery lots have been sold to persons having no intention of using them for burial purposes but intending to resell them at a profit.[19] Such lots have been sold to purchasers in large quantities on an investment basis on the representation that cemetery lots constituted a sound investment because they were free from taxes, assessments, seizure, and upkeep and were a hedge against depression, inflation, and war. Lots would be accepted for resale at double the purchase price or more. Since the lots were sold on an investment basis, the transaction was a sale of securities.

A further development in the use of the contract of sale of land as a security is to accompany it with another contract for the development of the land. Thus, contracts for the sale of land in Florida were sold along with contracts for the operation and development of the land as a tung grove for the production of tung oil.[20] These contracts included an ordinary deed or contract of purchase in which the seller agreed that if the purchaser made the payments therein specified constituting the purchase price, the seller would convey by warranty deed unincumbered the lands therein described. At the same time a separate development contract was executed between the purchaser and the developing company or individual, which provided that the company would develop the grove, market the tung oil, and pay the net profit to the purchaser. In holding these contracts to be securities, the court[21] said.

[16] Release 2140, Jan. 10, 1940; Release 2247, May 2, 1940. Also *Fourth Annual Report of S.E.C.*, 1938, p. 53.
[17] Release 2255, May 7, 1940; Release 2594, June 24, 1941; Release 2303, July 20, 1940.
[18] District Court, Boston, Mass.
[19] Release 2660, Sept. 16, 1941; Release 2820, April 16, 1942.
[20] Release 2658, Sept. 16, 1941; Release 2704, Nov. 6, 1941.
[21] District Court, Jacksonville, Florida.

that what the defendants were really offering and what the average purchaser was really buying was not land for its intrinsic value but a producing tung grove as a source of income without which he would not be interested in purchasing the land. Purchase of land, continued the court, was merely the conduit by which the investment was accomplished. Although the purchasers became the owners of land in fee simple and were entitled to possession, the right was more colorable than real, and it was not practicable or even contemplated that the purchasers living in distant places should come to Florida and take possession of the small tracts. Therefore, the contracts were securities.

Similar to the tung-grove contracts are the installment contracts and profit-sharing agreements in connection with the development of a pecan orchard.[22] Persons selling the contracts represented that they would undertake to plant, develop, maintain, and market the pecan crops for investors for one-eighth of the net value of the crop, seven-eighths to be paid to the purchasers of the contracts. Like the tung-grove contracts, the pecan profit-sharing agreements were held to be securities.[23]

The review of the foregoing cases indicates that the definition of a security in the Securities Act is a very broad one. In fact there seem to be only two essential features of a security. One feature appears to be that the purchaser does not contemplate taking possession of the property but is desirous only of the income from it. This point has been emphasized in many of the decisions referred to. As the court said in the decision concerning the fox-ranching agreements:

"The purchasers were not hoping by their own efforts to better themselves with the foxes purchased, but for a certain sum of money to become part of the business venture in which they were to reap a share in the profits of proceeds. They were investors. The transaction contemplates the conduct of a business enterprise by others than the purchasers, the profits or proceeds of which the purchasers were to share."

A second essential feature appears to be that a large number of similar contracts be issued. The sale of a single piece of land or a single pair of foxes, for example, would probably not be called the sale of a security even though the contract called for the management of the property by the seller. But if a great many such contracts are made with identical provisions and the prices received for them are the same or almost the same, the presumption that the form of the contract has been devised to evade the provisions of the Securities Act becomes very strong. In that case the courts are likely to hold that the contract is a security.

Certain characteristics which are commonly associated with a security are in fact not necessary to make the contract or instrument a security. The following are the most important:

1) The issuer does not need to be a corporation. He may be an individual, a group of persons, a partnership, or an officer of a corporation.

2) The contract is not necessarily either a bond or a share of stock. Legally it may take the form of a promissory note, a receipt for money or possibly property paid, a statement imprinted upon an old certificate by means of a rubber stamp, a contract of purchase and sale, a deed to real estate, a profit-sharing agreement, a management contract, or a certificate of membership in a society. This list is not necessarily exhaustive.

3) Provision for repayment of the sum paid by the investor or for the redemption of the security is not necessary.

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[22] Release 2688, Oct. 16, 1941; Welease 2756, January 8, 1942.

[23] District Court, Oklahoma City.

The foregoing discussion has reference only to the definition of a security for purposes of the Securities Act. It has no bearing upon limited liability theory of the corporation and it throws no light upon the question whether a given security holder would be considered a creditor or part owner. Neither does it indicate whether a contract would be considered a security for tax purposes, such as the stock-transfer tax. It shows only that the protection of the investor requires an extension of the Securities Act to a wide variety of transactions and that such an extension has been made.

THE ACCOUNTING EXCHANGE

THE COST FORMULA

Early text books on cost accounting commonly carried a graphic presentation of what was known as the *cost formula* (Figure 1). The formula was stated in a series of propositions as follows:

(1) Material cost plus labor cost equals prime cost.
(2) Prime cost plus manufacturing expense equals cost to make.
(3) Cost to make plus selling expense equals cost to make and sell.
(4) Cost to make and sell plus desired profit equals selling price.

These propositions and the figure representing them have almost vanished from recent accounting literature, but occasionally they do reappear. It is because of such reappearances that this critique is presented.

The earliest attacks on the formula were made by accountants with a economic turn of mind who insisted that few manufacturers were so fortunate as to be able to establish the selling price of their products by adding the desired profit to their peculiar costs to make and sell. These accountants regarded it as axiomatic that selling prices were generally determined in a market, and that profits emerged if the market determined selling prices were in excess of the total costs.[1]

To refer to factory overhead, burden, or indirect manufacturing cost as manufacturing expense, as is done in the second proposition above, has given rise to considerable protest. Howard Greer, while himself sometimes referring to these costs as manufacturing expense, recognizes that the title is a misnomer when he says, "Not until goods are finally sold in any expense [in the sense of a charge against revenue] recognized in the accounts."[2] Professor Paton says, "It cannot be too roundly urged that no valuable good or service however transitory in character, constitutes a revenue charge, with the possible exception of the services which are utilized in the final stages of sale and delivery."[3]

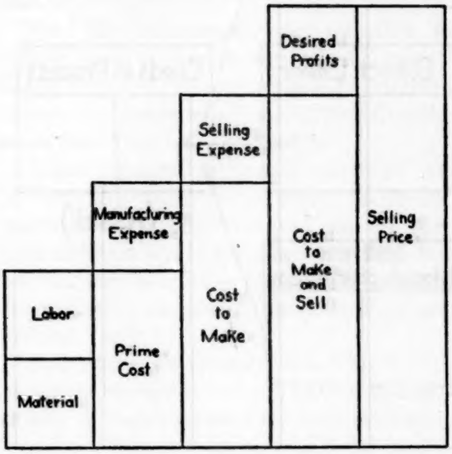

FIG. 1

It is certainly true that direct material is no less an asset because it is taken from stores and placed in process or because it is taken from process and placed in finished stock, at least if production is for an existing demand. It is equally true for labor services and other material and services comprehended by the title Indirect Manufacturing Cost. Figure 2 illustrates graphically why the term manufacturing expense is ill advised.

The cost formula illustrated in Figure 1 seems to carry the implication that some costs are more basic than others, and even that some costs may be recoverable before

[1] For an early expression of this view see *N. A. C. A. Bulletin*, Vol. I, No. 1, September 1, 1923.

[2] *How to Understand Accounting*, p. 94.

[3] *Essentials of Accounting*, p. 94.

others in the sales price of products. It has sometimes been suggested that it might be a wise policy to sell goods, if necessary, at any price which would cover prime costs and leave a margin to apply on indirect costs. It has even been suggested that if, in slack times, the manufacturer considers it desirable to maintain a skeleton labor force, it might be a wise policy to sell goods, if necessary, at any price which would cover direct material costs and leave a margin to apply to payrolls.

Without attempting to decide what might or might not be wise business policy relative to producing goods for a market which fails to provide a selling price high enough to cover all costs, it might be noted that the implication of cost priorities does not enjoy universal acceptance. Professor Paton, whose work along the borderline of accounting and economics has been especially significant, says, "In the price-making process all necessary costs of operation are on essentially the same level. There is in general no warrant for the view that certain costs have priority or right of way over other charges, or are more surely recoverable than other charges."[4]

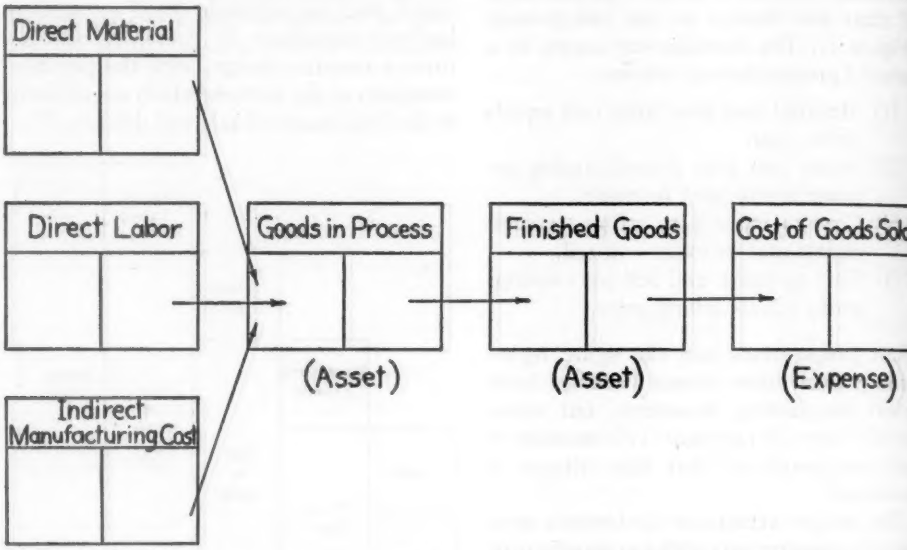

FIG. 2

Figure 3 better illustrates the relationship between elements of cost, profits, and selling price than does Figure 1. In Figure 3 no cost is represented as being more basic than other costs and there is no in-

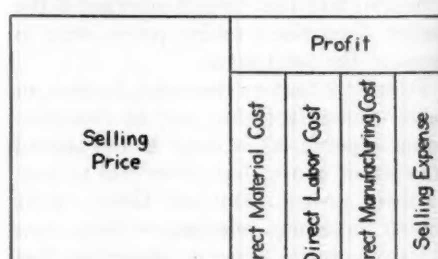

FIG. 3

[4] *Essentials of Accounting*, p. 756.

ference that some costs might be recoverable before others in the selling price of a product. There is a clear implication that costs are recovered in full before profit emerges.

In equation (1) where material cost plus labor cost equals prime cost, both material and labor are subject to the qualifying adjective, direct, and a question might well be raised as to whether or not prime cost is a necessary or useful concept.

It is not surprising that the old cost formula is going out of circulation. Its first equation is lacking in accuracy and is of doubtful significance. The second equation carries an erroneous concept as to the nature of indirect manufacturing cost. The fourth equation runs contrary to economic dicta, and the entire formula implies a system of priorities and cost recovery which does not in fact exist.

R. B. Cowin

NOTES ON DAIRY-ANIMAL VALUATION

Dairymen breeding and raising dairy animals are confronted with the question "what is the cost of a productive animal?"

Under income tax regulations, a dairyman may report on the cash or accrual basis. If the accrual basis is used, net income may be computed with the aid of inventories. A dairyman reporting on the accrual basis (in which an inventory is used to determine profits) finds the question of the value of dairy live stock vital where income is mainly derived from the sale of market milk and surplus animals.

Income-tax regulations are vague as to what actually is "cost" in an inventory of dairy cattle. A dairyman is not gifted in accounting and abhors the thought of bookkeeping. The regulations state that "all livestock raised or purchased for sale shall be included in the inventory at their proper valuation, determined in accordance with the method authorized and adopted for the purpose. Also livestock acquired for draft, breeding, or dairy purposes and not for sale, may be included in the inventory instead of being treated as capital assets subject to depreciation, provided such practice is followed consistently by the taxpayer."

From a dairyman's standpoint, what is "cost" for inventory purposes? Or, if inventoried at "market or cost" whichever is lower, what is "market"? These are difficult questions for the dairyman to answer.

For the accountant, the question is "How may we arrive logically at cost?" Little has been written outlining a method of any procedure which would consistently yield the "cost" of dairy cattle.

A short résumé of the activities involved in breeding and raising dairy cattle for market-milk production and sale of surplus animals would necessarily include the accounting difficulties involved in preparing a simple method of procedure for obtaining "cost."

Dairy animals must be fed. This means purchase or raising of feed, buying concentrates of various types for feed mixtures, necessary housing, labor, etc. If the feed is grown, the cattle-raising expense is the cost of the feed consumed. The growing of feed is a separate operation and all expenses, direct or indirect, are charged against the feed harvested. Feed used is charged at cost to the various consuming departments.

A cow reaches its productive stage at about 33 months when it may be bred to produce its first calf and enter the milking herd. The question immediately raised is, "What is the cost of the calf?" To answer this question involves a method of cost valuation which would value the animal from birth to production. On the basis of 33 months, there are three yearly inventory periods before the animal reaches the productive state.

In large dairy-herd practice, the calf is

separated from the cow at birth and established in a separate raising section of the farm operation. This part of its life may be termed the "calf period." It usually remains in the calf department for nine months.

The calf department, operated as a distinctly independent entity of the dairy operation, lends itself admirably to a "cost" program. Cost of labor, feed, equipment, rental of land occupied, depreciation of equipment and building, etc., are charged to the calf department. Record of the number of calves housed in this department, number of months each animal remained (including time of calves which died) give a total of calf-months with which this department should be credited. The total number of calf-months divided into the total charges of operation and maintenance gives the unit of "cost" termed "calf-month." If a calf had been in the calf department for nine months, its cost would be 9 times the unit of "calf-month." If a calf died during the year, the loss is the cost it had accumulated upon the basis of its "calf-month" charge. When a calf is transferred to the "heifer" department, it carries it accumulated cost over to that department.

In the heifer department, all costs of operation and maintenance are charged to "heifer department." A record is maintained of the number of months each animal is housed in this department. The total number of months accumulated is divided into the total cost of operation and maintenance, and a unit of cost, termed "heifer-month" is obtained. To arrive at the cost of a heifer at the end of a fiscal period, the number of months the heifer remained in this department during the year is multiplied by the "heifer-month" unit, resulting in the heifer cost, which, added to the accumulated calf cost, gives a total heifer cost of the year for each age group. If a heifer died during the year, its calf and heifer cost is the loss suffered.

The heifer cost is increased until the animal reaches breeding age at about 33 months. At breeding, its accumulated calf and heifer cost is its cost or inventory value as it enters the productive herd.

If the inventory is based upon "cost or market" it is a simple matter to compare "market values," if obtainable, at various age groups, using the figure of "cost" or "market," whichever is lower.

Market-milk production is an element of dairying that can be quite unprofitable if not carefully watched. It involves not only the maximum production in market milk, but also the disposal of surplus animals.

To illustrate the method of cost outlined, assume the calendar year is the business year; inventories are taken on December 31 each year; on March 31 a calf is born and enters the calf department. The calf department has yearly maintenance and operation charges of \$37,500. The total accumulated months of calf life at the end of the year was 12,500 months. The formula to obtain calf-month cost is

$$\frac{\text{Calf Cost}}{\text{Calf-month}} \text{ or } \frac{37{,}500}{12{,}500}$$

or \$3.00 per calf-month.

A calf born March 31 would have a record of nine months in the calf department. Its cost for inventory is

Calf-months × "Calf-Month" cost,
or 9×\$3.00, or \$27.00.

If cost is used at inventory, this calf is valued at \$27.00 as it enters the heifer department.

If "cost or market" is used, the lower figure is its value as it enters the heifer department.

If, at the end of the year, the total heifer department costs were \$36,000 and the total number of accumulated heifer-

months was 18,000, the formula of cost divided by heifer-months results in the "heifer-month" unit, or,

$$\frac{\text{Cost}}{\text{Heifer-Months}} \text{ or } \frac{36{,}000}{18{,}000} = \$2.00 \text{ per heifer-month.}$$

The calf entering the heifer department on January 1 spent 12 months as a heifer. Its heifer cost is 12×\$2.00 or \$24.00. Added to its calf cost at entrance of \$27.00 makes a heifer cost at the 21st month of \$51.00.

Again if it is valued at "cost or market," market at its age is compared to cost and the lower of the two is used.

The heifer cost at the beginning of the year is its value at 21 months. The heifer has another 12 months cost added to it before it enters the productive herd at 33 months.

This method of arriving at the cost of a dairy cow reflects the fluctuation in cost of feed, labor, etc. It also eliminates the arbitrary valuation of a calf. Consistently followed, it gives a dairyman data for comparative purposes year after year, enabling him to discover the reasons for changing costs.

The important base from which to establish the method of cost of "calf- or heifer-month" is the identification of each animal to keep its individual record. In dairy practice, dairy animals are closely confined and therefore easily identified. A system of identification through ear numbering, is followed. In addition, calves may be photographed to show markings. The photograph is additional identification in the event an ear tag is lost.

While the cost system outlined has proven satisfactory in the operation of a large dairy, it will not be satisfactory in beef-raising operations.

In dairies, individual animal identification is simple. In beef raising, individual animal identification is impossible for the reason that beef animals range over a wide territory.

A. A. HARTMANN

WHAT AN ACCOUNTING STUDENT SHOULD KNOW

Natural Aptitudes

An accounting student should first know how to think clearly and secondly what to think about. He must be honest, sober, apt, and mentally alert, while in accounting, as in any other vocation. There should be an inherent capacity for development in the chosen field. A good address is of course always desirable, but natural aptitudes, invaluable as they are, will bear but meagre fruit unless they are reinforced by the cultivation of good general habits, the bedrock of worthy attitudes and relative energy to furnish the driving force of diligent application and enthusiasm to chart its course. A lofty standard, to be sure, but, we are reminded, a man's reach should be greater than his grasp and so I should add further that he should develop habits which enable him to cooperate with his associates and be liked by them and others with whom he comes in contact, fasten, from the outset, habits of loyalty to those for whom he is working, and exercise and so develop the initiative to plan work for himself and subsequently for others. He needs to know the meaning of actual money and the physical things which are expressed in his figures. Nothing quite takes the place of actual business experience with real dollars when he is a boy doing neighborhood chores cutting grass or later working in college by participating in student business activities publishing the year-book. The ability to meet these natural aptitude tests is an index to ultimate achievement.

Formal Education

The student should have training in the

liberal arts: the ideal curriculum would cover a broad base of general academic subjects to start with, a gradual tapering off of general studies, and at the same time a broadening out of technical studies as he advances, so that at the close of his formal education the technical studies predominate. It would be expected that the employer who has had little general college education would minimize its benefits, but many practitioners who are not college graduates are insisting upon a college education for new men they employ. It is instructive to note the uses to which general subjects may be put when the student has had the training. For instance, chemistry may be of use in drug inventories and geometry and conic sections are valuable in judging contents of grain elevators and oil reserves. A knowledge of Latin is invaluable as a background to the subsequent learning of Spanish.

Formal general education and personality factors are stressed with good reason inasmuch as technical training can be secured later along the specific lines desired by the employer who can do nothing about the lack of formal general education, nor much about altering the student's personality. However, if the student does have a sound technical training so much the better.

The technical accounting courses are designed to increase the student's knowledge of various business transactions and develop his ability to handle business problems; although we should scarcely need the reminder that mental power is developed more by exercising the mind with many varied problems than by the mere development of memory by learning to repeat rules having technical application.

Facility in the use of the English language cannot be over stressed. The student should devote much time to composition throughout his school years. He should have continual assignments to write on varied subjects, as the only way he will be able to express his thoughts to others is through the proper use of the mother tongue. He may be fully equipped and prepared for his business life, but if he is unable to express himself in writing and speaking, his preparation goes for naught. He must open the sluice gates of his mind and have his thoughts flow with understanding to others.

In addition to conveying his thoughts to others he must be able to receive, with a perceptive mind, the benefits from the thoughts of others. This will come largely from reading and in order to keep abreast of the swiftly moving stream of accounting literature, as well as current events, the ability to read swiftly is fast becoming an essential art for the accounting student. This ability is also used in perusal of documents like bond indentures and minutes. An article in the *Reader's Digest* for November 1941 on the subject of reading is well worth bringing to the attention of your accounting students.

The accounting student's formal education should definitely include arithmetic, algebra, and geometry; and the current dizzy tax laws make one feel that even relativity may be found essential!

Technical Training

For his technical knowledge he should know the function of accounting and the need for it by studying its early history. He should recognize the prime elements in each business transaction and the effect the transaction has on the business and the accounts of the business. This demands a knowledge of the theory of accounts and practical accounting, that is to say, journalizing, expressed as an entry in a book such as cash book or purchase book, the mechanics of keeping and classifying book accounts, followed by the trial balance and the basic part it plays in the accounting. The preparation of statements next suc-

ceeds and then the interpretation of statements, which is an art the accounting student must acquire, since the information shown in statements goes for nothing when it is not understood and used.

One of the most promising accounting fields today is that of internal check and control, a feature which should be covered thoroughly in every progressive accounting course. The student should be trained to review systems of internal check and control in order to see if they are adequate and prepared to make such recommendations as may be necessary for a more effective application.

The use of labor-saving devices should also be included in the training of each student if he hopes to make progress in the profession; although, because of the many changes in such equipment, this study should be reserved for the latter part of the student's training. The subject of labor-saving devices includes various sorts of mechanical equipment; many a boy has opened the door to his first job by supplementing his college education with a few months' training in the operation of a typewriter, comptometer, or other similar office machine. Being able to do something with your hands may provide the opening to do something with your mind.

The matter of costs usually and naturally comes last in the prospective accountant's study. Attention is directed to the fact that while costs have always been important in manufacturing, the time has now come when a knowledge of costs is also essential in distribution and retailing. The student will have to know the basic principles of costs and how they are applied in practice if he is to hold his own under present-day conditions.

The accounting student should have a working knowledge of such allied subjects as economics, commerical law, corporation finance and office administration through supplementary courses, unless the school schedule causes difficulties, in which event the subjects should be pursued by independent study, for they are essential to the student who expects to be in business.

It must be kept in mind that war means taxes and every accounting student should know as much about taxes as possible; taxes should definitely become an integral part of the student's accounting training; accounting and taxes go hand in hand.

LESLIE A. HEATH

PROFESSIONAL EXAMINATIONS

A Department for Students of Accounting

Henry T. Chamberlain

The following problems were presented as the first half of the May, 1942, C.P.A. examination in accounting theory and practice prepared by the Board of Examiners of the American Institute of Accountants. The time allowed for the solution of these four problems was six hours and the weights assigned were as follows: problem 1, 18 points; problem 2, 12 points; problem 3, 12 points; problem 4, 8 points.

For those interested in solving these problems a suggested time schedule is given below:

Problem 1	90 minutes
Problem 2	60 minutes
Problem 3	90 minutes
Problem 4	60 minutes

No. 1

From the following data prepare:

(a) Consolidated balance sheet of December 31, 1941.

(b) Statement of minority interests.

(c) Statement of consolidation surplus and goodwill.

Also submit worksheets.

On December 31, 1940, the Rockford Radio Company bought 90 per cent of the $500,000 capital stock of the Elgin Supply Company for $370,080, and 80 per cent of the $200,000 seven per cent preferred stock of the Peoria Phonograph Company for $176,000.

The Elgin Supply Company had acquired previously (December 31, 1939), 90 per cent of the $200,000 common stock of the Peoria Phonograph Company for $126,000.

The following balance sheets are presented, together with other data, viz.—

Rockford Radio Company

Balance sheet—December 31, 1941

Assets		*Liabilities*	
Investments		Accounts payable	
Elgin Co.	$ 397,080	Peoria Co.	$ 10,000
Peoria Co.	187,200	Capital stock	
Notes receivable		Preferred	400,000
Peoria Co.	20,000	Common	800,000
Other assets (net)	708,520	Earned surplus	102,800
	$1,312,800		$1,312,800

1. Rockford consistently takes upon its books its share of Elgin's book profits.

2. The difference of $5,000 between the current accounts of Rockford and Peoria represents Peoria merchandise in transit to Rockford.

Elgin Supply Company
Balance sheet—December 31, 1941

Assets		*Liabilities*	
Investments		Notes receivable discounted	$ 10,000
Peoria Co.	$126,000	Capital stock	500,000
Notes receivable		Surplus	26,000
Peoria Co.	10,000		
Other assets (net)	400,000		
	$536,000		$536,000

3. Elgin does not take upon its books its share of the Peoria profits but credits to income the Peoria dividends when received.

4. Elgin made a profit of $50,000 in 1941, before considering income from its investment in Peoria, and on December 20, 1941, paid a dividend of 4 per cent ($20,000) on its $500,000 capital stock.

Peoria Phonograph Company
Balance sheet—December 31, 1941

Assets		*Liabilities*	
Goodwill	$ 20,000	Notes payable	
Accounts receivable		Rockford Co.	$ 20,000
Rockford Co.	15,000	Elgin Co.	10,000
Other assets (net)	425,000	Dividends payable	
		Preferred	14,000
		Common	16,000
		Capital stock	
		7% Preferred	200,000
		Common	200,000
	$460,000		$460,000

5. Peoria made a profit of $20,000 in 1940, which was paid out in dividends that were duly received by the shareholders before December 31, 1940.

6. Peoria made a profit of $30,000 in 1941 and on December 20, 1941, declared dividends of 7 per cent on the preferred and 8 per cent on the common stock, both payable January 10, 1942.

Provision had been made by the three companies for all known liabilities and accruals, including 1941 federal income and excess-profits taxes.

No. 2

Morton and Norton were retail dry goods merchants and operated a cash store, no credit being extended to customers. The business was conducted as a partnership in which Morton had a two-thirds and Norton a one-third interest (capital as well as profits). The accounts were currently kept on a cash basis but at the end of each year they were adjusted to the accrual basis. At that time the profits were divided in the above ratio and credited to the partners' capital accounts.

Life insurance was carried in the amount of $10,000, payable to the partnership upon the death of either member. The premiums paid were charged to expenses and no account was taken of surrender values.

The stock of merchandise was insured for $45,500 and the store and office fixtures for $9,500. The two policies were carried with different companies and both were written with the 80 per cent coinsurance clause. Under the standard 80 per cent clause the insurance company "shall not be liable for a greater proportion of any loss . . . than the sum hereby insured bears to 80 per cent of the actual cash value of

said property at the time such loss shall happen."

A fire occurred in the early morning hours of February 1, 1942, in which Mr. Morton lost his life. The fixtures were a total loss, but part of the merchandise was salvaged and was agreed with the adjusters to be worth $17,000. A few days after the settlement it was sold for $17,500.

The books of account had been saved and were used as an aid in arriving at a settlement of the fire loss. The following trial balance was drawn off before any adjustments had been made:

	Dr.	*Cr.*
Cash	$ 20,256.57	
Inventory, Dec. 31, 1941	61,328.20	
Store and office fixtures	18,000.00	
Reserve for depreciation		$ 7,230.00
Unexpired insurance	280.00	
Accounts payable		7,928.75
Morton capital		58,475.78
Norton capital		29,237.89
Sales		15,320.50
Purchases	14,396.15	
Expenses	3,932.00	
	$118,192.92	$118,192.92

The books showed that 30 per cent gross profit had been made in the preceding two years and this percentage was agreed upon with the adjusters as a basis for calculating the value of the inventory. It was also agreed to accept the depreciated book value of the fixtures as their value at the time of the fire.

There had been no capital expenditure in 1942, and depreciation had been provided at the rate of 8 per cent per annum to December 31, 1941.

The item of unexpired insurance was carried forward from December 31, 1941, being applicable to the succeeding eight months.

The expenses include the partners' January salaries. All liabilities outstanding on January 31, 1942, had been recorded.

The fire loss was determined on the basis of the foregoing data and in accordance with the terms of the policies, and the entire amount thus agreed upon was collected in February. Also the life insurance was promptly settled in that month.

The firm then paid its liabilities and dissolved after dividing the cash—its only remaining asset—between the two owning interests.

Prepare a columnar worksheet, clearly showing the adjustment of the above trial balance in accordance with the data given, the operating results in the month of January as distinct from the fire loss, the amount of the fire loss, and the final liquidation of assets and liabilities other than cash, thus leaving on the books only the cash and the two capital accounts.

Submit calculations of inventory value and recoverable fire loss.

No. 3

From the following trial balance, operating and other data prepare the December 31, 1941, balance sheet of the Brandon Manufacturing Company and a statement of profit and loss for the year ended on that date.

Opening Trial Balance January 1, 1941

	Dr.	*Cr.*
Cash	$ 3,000	
Accounts receivable	15,700	
Raw materials	55,000	
Goods in process	8,350	
Finished goods	154,500	
Deferred charges	1,100	
Land	40,000	
Buildings	94,000	
Reserve for depreciation of buildings		$ 14,000
Machinery and equipment	81,000	
Reserve for depreciation of machinery and equipment		21,000
Four per cent notes payable		270,000
Accounts payable		20,500
Five per cent cumulative preferred stock		100,000
Common stock		80,000
Deficit	52,850	
	$505,500	$505,500

Operating and Other Data

1. Net sales	$550,000
2. Increase of raw-materials inventory	64,000
3. Purchases of raw materials	347,000
4. Labor	60,000

5. Manufacturing expenses 35,900
6. Buildings were acquired January 1, 1934; estimated life on that date 47 years
7. Machinery and equipment were acquired January 1, 1934; estimated life on that date 27 years
8. Increase of materials in process inventory 20,000
9. Decrease of finished goods inventory 36,000
10. Selling expenses 35,000
11. Administrative expenses (including capital-stock tax) 26,000
12. Collected from customers 520,700
13. Paid to trade creditors 347,500
14. Notes payable donated to the company by the owners on January 31, 1941, and canceled 45,000

    (Interest was paid on these notes to date of cancellation. All other notes were renewed as they became due and no other borrowing took place in 1941.)
15. Interest on notes was paid in 1941 to the amount of 6,650
16. Deferred charges, December 31, 1941, represented by unexpired insurance on plant 1,500
17. Purchase of $5,000 U. S. savings bonds in December, 1941 5,000
18. Donated to the Red Cross 2,000
19. The opening deficit is made up as follows

	Loss	*Profit*	
1934	$16,000		
1935	18,000		
1936		$ 2,500	
1937		17,000	
1938	10,000		
1939	15,000		
1940	13,350		
	$72,350	$19,500	$52,850

20. The normal and surtax rates applicable to the 1941 net income are:

    Normal tax—

    24 per cent on the net income

    Surtax—

    6 per cent on the net income not in excess of $25,000

    7 per cent on the net income in excess of $25,000
21. For the purposes of this problem the declared value excess-profits tax and the excess-profits tax should be ignored.
22. During its entire existence the company had no capital gains or losses, nor were there any other items of income or expense that would affect the calculation of the "net operating loss deduction"
23. The company's annual statements had been correctly prepared from year to year since its organization on January 1, 1934, and all tax returns had been accepted by the Internal Revenue Bureau as filed.

No. 4

The report of the City of Glendale for the fiscal year ended March 31, 1942, includes the following comparative statement:

	General Fund		Capital Fund	
	March 31 1942	March 31 1941	March 31 1942	March 31 1941
Assets				
Cash in banks	$ 12,000	$ 14,000	—	—
Uncollected taxes	84,000	72,500	—	—
Accounts receivable	8,200	21,000	—	—
Sinking fund cash	—	—	$ 5,000	$ 1,000
Deferred charges to future taxation	—	—	340,000	205,000
General fund deficit	—	20,000	—	—
	$104,200	$127,500	$345,000	$206,000
Liabilities				
Notes payable	$ 50,000	$120,000	—	—
Accounts payable	8,000	7,500	—	—
Reserve for doubtful accounts	600	—	—	—
Bonded indebtedness	—	—	$345,000	$206,000
General fund surplus	45,600	—	—	—
	$104,200	$127,500	$345,000	$206,000

The following additional information is disclosed concerning budget and transactions in the year ended March 31, 1942:

Estimated revenues		$250,000
Actual revenues		222,200
Appropriations (including $4,000 to sinking fund and $11,000 for retirement of bonds)		260,000
Expenditures		306,000
Serial bonds issued (at par) to fund operating deficit (the proceeds were used to liquidate general-fund liabilities)		150,000
Serial bonds retired through general appropriations		11,000
Bonded indebtedness March 31, 1941, represented by:		
Serial bonds	$111,000	
Sinking-fund bonds	95,000	206,000

No reserve for uncollectible taxes is to be considered.

From the foregoing, based on principles of municipal reporting, prepare:

(a) Fund balance sheet of March 31, 1942.
(b) Statement of general-fund cash.
(c) Statement of general-fund surplus.
(d) Statement of bonded indebtedness.

Solution to Problem 1

(a)

The Rockford Radio Company and Subsidiaries
Consolidated Balance Sheet
December 31, 1941

Assets

Sundry assets (net)		$1,538,520.00
Goodwill		36,000.00
Total assets		$1,574,520.00

Liabilities

Note payable		$ 10,000.00
Dividends payable to minority shareholders		4,400.00
Minority interest (see schedule)		119,440.00
Capital stock:		
Preferred	$400,000.00	
Common	800,000.00	1,200,000.00
Consolidated earned surplus		115,760.00
Consolidation surplus		124,920.00
Total liabilities		$1,574,520.00

(b)

The Rockford Radio Company and Subsidiaries
Statement of Minority Interests
December 31, 1941

Peoria Phonograph Company:		
7% preferred stock	$40,000.00	
Common stock	20,000.00	$ 60,000.00
Elgin Supply Company:		
Capital stock	$50,000.00	
Earned surplus	4,040.00	
Consolidation surplus	5,400.00	59,440.00
Total minority interest		$119,440.00

Key to Adjustments

(1) To set up dividends receivable from the Peoria Company.
(2) To eliminate from the investment accounts the book value of the Peoria Company at the date of balance sheet.
(3) To set up merchandise in transit and to adjust the inter-company accounts.
(4) To eliminate inter-company receivables and payables.
(5) To take up Rockfords share of the Peoria dividend applicable to Elgin.
(6) To eliminate 90% of the book value of Elgin.

Solution to Problem 1

The Rockford Radio Company and Subsidiaries
Working Papers—Consolidated Balance Sheet
December 31, 1941

Assets	*Rockford Radio Company*	*Elgin Supply Company*	*Peoria Phonograph Company*		*Adjustments and Examinations Debit*		*Adjustments and Examinations Credit*	*Consolidated Balance Sheet*
Investment in Elgin Co. (90%)	$ 397,080.00			(5)	$ 12,960.00	(6)	$486,360.00	$ 76,320.00 C.S.
						(2)	160,000.00	
Investment in Peoria Co. Pfd. (80%)	187,200.00					(1)	11,200.00	16,000.00 G.
Investment in Peoria Co. Com. (90%)		$126,000.00				(2)	180,000.00	54,000.00 C.S.
Notes receivable—Peoria Co.	20,000.00	10,000.00				(4)	30,000.00	
Other assets (net)	708,520.00	400,000.00	$425,000.00	(3)	5,000.00			1,538,520.00
Goodwill			20,000.00					20,000.00
Accounts receivable—Rockford Co.			15,000.00			(4)	15,000.00	
	$1,312,800.00	$536,000.00	$460,000.00					
Dividends receivable				(1)	25,600.00	(4)	25,600.00	$1,444,200.00
Liabilities								
Accounts payable—Peoria Co.	$ 10,000.00			(4)	15,000.00	(3)	5,000.00	
Notes receivable discounted (note payable)		$ 10,000.00						$ 10,000.00
Notes payable:								
Rockford Co.			$ 20,000.00	(4)	20,000.00			
Elgin Co.			10,000.00	(4)	10,000.00			
Dividends payable:								
Preferred			14,000.00	(4)	11 200.00			2 800.00
Common			16,000.00	(4)	14,400.00			1,600.00
Capital stock								
Rockford Co.—Preferred	400,000.00							400.000.00
Rockford Co.—Common	800,000.00							800,000.00
Elgin Co.		500,000.00		(6)	450,000.00			50,000.00 M
Peoria Co.—Preferred—7%			200,000.00	(2)	160,000.00			40,000.00 M
Peoria Co.—Common			200,000.00	(2)	180,000.00			20,000.00 M
Surplus:								
Rockford Co.	102,800.00					(5)	12,960.00	115,760.00 S
Elgin Co.		26,000.00		(6)	36,360.00	(1)	14,400.00	4,040.00 M
	$1,312,800.00	$536,000.00	$460,000.00		$940,520.00		$940,520.00	$1,444,200.00

(c) *The Rockford Radio Company and Subsidiaries, Statement of Consolidation Surplus and Goodwill, December 31, 1941*

Consolidation Surplus

Investment in Elgin Company:			
Book value of Elgin Company, December 31, 1940		$496,000.00	
Less minority interest		49,600.00	
Equity acquired by Rockford Company		$446,400.00	
Cost of investment		370,080.00	
Consolidation surplus			$76,320.00
Investment in Peoria Company common stock:			
Book value of Peoria Company common stock, December 31, 1939		$200,000.00	
Less minority interest		20,000.00	
Equity acquired by Elgin Company		$180,000.00	
Cost of investment		126,000.00	
Consolidation surplus			54,000.00
Total consolidation surplus			$130,320.00
Less portion applicable to Elgin Company minority shareholders			5,400.00
Consolidation surplus applicable to Rockford Company			$124,920.00

Goodwill

Investment in Peoria Company 7% preferred stock:			
Cost of investment		$176,000.00	
Book value of Peoria company preferred stock, December 31, 1940	$200,000.00		
Less minority interest	40,000.00		
Equity acquired by Rockford Company		160,000.00	
Goodwill			$ 16,000.00
Goodwill on books of Peoria Company			20,000.00
Total goodwill			$ 36,000.00

Solution to Problem 2

Calculation of Inventory, February 1, 1942

Inventory, December 31, 1941	$61,328.20
Purchases in January	14,396.15
Total	$75,724.35
Less cost of goods sold (70% of $15,320.50)	10,724.35
Inventory, February 1, 1942	$65,000.00

Calculation of Fire-Loss Claims

On Inventory		
Inventory, February 1, 1942		$65,000.00
80% of $65,000.00		$52,000.00
Inventory loss ($65,000.00 less $17,000.00)		$48,000.00
Claim 45500/48000 or ⅞ of $48,000.00		$42,000.00
On Fixtures		
Cost of assets		$18,000.00
Depreciation to December 31, 1941	$7,230.00	
Depreciation for January, 1942	120.00	7,350.00
Depreciated value		$10,650.00

Since 80% of $10,650.00 is less than the amount of insurance carried ($9,500.00) the claim is for the face of the policy	$ 9,500.00

Key to Adjustments

(1) To set up ending inventory (see computation)
(2) To close opening inventory to cost of goods sold
(3) To close purchases to cost of goods sold
(4) To record depreciation for month of January
(5) To record insurance expense for month of January
(6) To record five insurance claims (see computation) and fire loss
(7) To write off unexpired insurance
(8) To record life-insurance claims
(9) To record sale of merchandise
(10) To record collection of insurance claims
(11) To record payment of accounts payable
(12) To transfer net income to capital accounts.

Solution to Problem 2

Morton and Norton
Working Papers—Adjusting Books
February 1, 1942

	Trial Balance (before adjustment)		*Adjustments*		*Profit and Loss January, 1942*		*Balance Sheet*	
	Debit	*Credit*	*Debit*	*Credit*				
Cash	$ 20,256.57		(10) $61,500.00 (9) 17,500.00	(11) $ 7,928.75			$91,327.82	
Inventory, December 31, 1941	61,328.20			(2) 61,328.20				
Store and office fixtures	18,000.00			(6) 18,000.00				
Reserve for depreciation		$ 7,230.00	(6) 7,350.00	(4) 120.00				
Unexpired insurance	280.00			(7) 245.00 (5) 35.00				
Accounts payable		7,928.75	(11) 7,928.75					
Morton capital		58,475.78		(12) 2,409.43				$60,885.21
Norton capital		29,237.89		(12) 1,204.72				30,442.61
Sales		15,320.50				$15,320.50		
Purchases	14,396.15			(3) 14,396.15				
Expenses	3,932.00				$ 3,932.00			
	$118,192.92	$118,192.92						
Inventory, February 1, 1942			(1) 65,000.00	(9) 17,000.00 (6) 48,000.00				
Cost of goods sold			(2) 61,328.20 (3) 14,396.15	(1) 65,000.00	10,724.35			
Depreciation			(4) 120.00		120.00			
Insurance expense			(5) 35.00		35.00			
Net income from January, 1942 operations					509.15			
					$15,320.50	$15,320.50		
Net income from January, 1942 operations						$ 509.15		
Claims against fire insurance companies			(6) 51,500.00	(10) 51,500.00				
Fire loss			(6) 7,150.00 (7) 245.00		$ 7,395.00			
Life insurance claim			(8) 10,000.00	(10) 10,000.00				
Life insurance realized				(8) 10,000.00		10,000.00		
Gain on sale of merchandise				(9) 500.00		500.00		
Net income transferred to capital accounts			(12) 3,614.15		3,614.15			
			$307.667.25	$307,667.25	$11,009.15	$11,009.15	$91,327.82	$91,327.82

Solution to Problem 3

Brandon Manufacturing Company
Working Papers
January 1, 1941 to December 31, 1941

	Trial Balance January 1, 1941		Transactions and Adjustments		Manufacturing Accounts		Profit and Loss		Balance Sheet	
	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit
Cash	$ 3,000.00		(7) $ 520,700.00	(3) $ 518,050.00					$ 5,650.00	
Accounts receivable	15,700.00		(1) 550,000.00	(7) 520,700.00					45,000.00	
Raw materials	55,000.00				$ 55,000.00					
Goods in process	8,350.00				8,350.00					
Finished goods	154,500.00						$154,500.00			
Deferred charges	1,100.00		(10) 400.00						1,500.00	
Land	40,000.00								40,000.00	
Buildings	94,000.00								94,000.00	
Reserve for depreciation of buildings		$ 14,000.00		(4) 2,000.00						$ 16,000.00
Machinery and equipment	81,000.00								81,000.00	
Reserve for depreciation of machinery and equipment		21,000.00		(4) 3,000.00						24,000.00
Four per cent notes payable		270,000.00	(8) 45,000.00							225,000.00
Accounts payable		20,500.00	(3) 347,500.00	(2) 347,000.00						20,000.00
Five per cent cumulative preferred stock		100,000.00								100,000.00
Common stock		80,000.00								80,000.00
Deficit	52,850.00								52,850.00	
	$505,500.00	$505,500.00								
Sales				(1) 550,000.00				$550,000.00		
Purchases			(2) 347,000.00		347,000.00					
Labor			(3) 60,000.00		60,000.00					
Manufacturing expenses			(4) 5,000.00 (3) 35,900.00	(10) 400.00	40,500.00					
Selling expenses			(3) 35,000.00				35,000.00			
Administrative expenses			(3) 26,000.00				26,000.00			
Interest expense			(9) 2,500.00 (3) 6,650.00				9,150.00			
U. S. Savings Bonds			(3) 5,000.00						5,000.00	
Donation to Red Cross			(3) 2,000.00				2,000.00			
Inventory of raw materials			(5) 119,000.00						119,000.00	
Inventory of work in process			(5) 28,350.00						28,350.00	
Manufacturing account				(5) 147,350.00		$147,350.00				
Inventory of finished goods			(6) 118,500.00						118,500.00	
Profit and loss				(6) 118,500.00				$118,500.00		
Paid-in surplus				(8) 45,000.00						45,000.00
Accrued interest payable				(9) 2,500.00						2,500.00
					$510,850.00	$147,350.00				
Cost of goods manufactured						363,500.00	363,500.00			
					$510,850.00	$510,850.00				
Federal income tax			(11) 15,250.00				15,250.00			
Accrued Federal income tax				(11) 15,250.00						15,250.00
			$2,269,750.00	$2,269,750.00			$605,400.00	$668,500.00		
Net income for the year ending December 31, 1941							$ 63,100.00			63,100.00
							$668,500.00	$668,500.00	$590,850.00	$590,850.00

Key to Adjustment

(1) To record sales
(2) To record purchases
(3) To record cash disbursements:

Creditors	$347,500.00
Labor	60,000.00
Manufacturing expenses	35,900.00
Selling expenses	35,000.00
Administrative expenses	26,000.00
Interest	6,650.00
U. S. Savings Bonds	5,000.00
Donation to Red Cross	2,000.00
Total	$518,050.00

(4) To record depreciation on buildings, machinery and equipment
(5) To set up ending inventories of raw materials and work in process
(6) To set up ending inventory of finished goods
(7) To record cash collections
(8) To record cancellations of notes payable
(9) To set up accrued interest payable
(10) To adjust deferred charges
(11) To set up accrued Federal income tax:

Net income before income tax (see note below)	$ 78,350.00
Less net operating loss deduction	28,350.00
Net income subject to tax (see note below)	$50,000.00
24% of $50,000.00	$12,000.00
6% of 25,000.00	1,500.00
7% of 25,000.00	1,750.00
Tax	$15,250.00

NOTE—In this solution it is assumed that manufacturing expenses as stated in the problem do not include depreciation charges. It is further assumed that the cancellation of the notes payable by the "owners" was a cancellation by the stockholders and as a consequence was not taxable. If the opposite assumptions were made—and they would be equally valid—the taxable income would have been $100,000.00.

Brandon Manufacturing Company
Statement of Profit and Loss
January 1, 1941 to December 31, 1941

Sales, net		$550,000.00
Cost of goods sold:		
Finished-goods inventory, January 1, 1941	$154,500.00	
Cost of goods manufactured	363,500.00	
	$518,000.00	
Finished goods inventory, December 31, 1941	118,500.00	399,500.00
Gross profit on sales		$150,500.00
Selling expenses	$ 35,000.00	
Administrative expenses	26,000.00	
Interest expense	9,150.00	
Donation to Red Cross	2,000.00	72,150.00
Net income before Federal income tax		$ 78,350.00
Federal income tax		15,250.00
Net income, January 1, 1941 to December 31, 1941		$ 63,100.00

Brandon Manufacturing Company
Balance Sheet, December 31, 1941

Assets

Current assets			
Cash		$ 5,650.00	
Accounts receivable		45,000.00	
Inventories:			
Raw materials	$119,000.00		
Goods in process	28,350.00		
Finished goods	118,500.00	265,850.00	$316,500.00
Unexpired insurance			1,500.00
U. S. Savings Bonds, at cost			5,000.00
Fixed assets			
Land		$ 40,000.00	
Buildings	$ 94,000.00		
Less reserve for depreciation	16,000.00	78,000.00	
Machinery and equipment	$ 81,000.00		
Less reserve for depreciation	24,000.00	57,000.00	175,000.00
Total assets			$498,000.00

Liabilities

Current liabilities			
Accounts payable		$ 20,000.00	
Four per cent notes payable		225,000.00	
Accrued interest payable		2,500.00	
Accrued Federal income taxes		15,250.00	$262,750.00
Capital stock and surplus			
Five per cent cumulative preferred stock (see note)		$100,000.00	
Common stock		80,000.00	
Paid-in surplus		45,000.00	
Earned surplus:			
Deficit, January 1, 1941	$ 52,850.00		
Net income for 1941	63,100.00	10,250.00	235,250.00
Total liabilities			$498,000.00

NOTE:—The balance sheet could carry a footnote stating that dividends on the preferred stock are in arrears for whatever period of time the preferred stock has been outstanding.

Solution to Problem 4

City of Glendale
Balance Sheet—March 31, 1942

Assets

General fund		
Cash		$ 12,000.00
Uncollected taxes		84,000.00
Accounts receivable	$ 8,200.00	
Less reserve for doubtful accounts	600.00	7,600.00
		$103,600.00
Capital fund		
Deferred charges to future taxation:		
For redemption of serial bonds	$250,000.00	
For redemption of sinking-fund bonds	90,000.00	$340,000.00
Fund balance		5,000.00
		$345,000.00
Sinking fund		
Cash		$ 5,000.00

Liabilities

General fund		
Notes payable		$ 50,000.00
Accounts payable		8,000.00
Surplus after deducting $46,000.00 for expenditures in excess of appropriations (see schedule)		45,600.00
		$103,600.00
Capital fund		
Bonded indebtedness:		
Serial bonds	$250,000.00	
Sinking-fund bonds	95,000.00	$345,000.00
		$345,000.00
Sinking fund		
Fund balance		$ 5,000.00

City of Glendale
Statement of General-Fund Cash
For the Year Ending March 31, 1942

(b)

Balance March 31, 1941		$ 14,000.00
Receipts		
Proceeds from sale of serial bonds	$150,000.00	
Collection of taxes receivable	210,700.00	
Collection of accounts receivable	12,800.00	373,500.00
		$387,500.00
Disbursements		
Payment of notes payable	$ 70,000.00	
Payment of accounts payable (including $11,000 for retirement of serial bonds and $4,000 for sinking fund)	305,500.00	375,500.00
Balance, March 31, 1942		$ 12,000.00

(c)

Statement of General-Fund Surplus
For the Year Ending March 31, 1942

Balance (Deficit) March 31, 1941		*$ 20,000.00
Surplus credits		
Proceeds of serial-bond issue		150,000.00
Revenue:		
Estimated revenue	$250,000.00	
Less excess of estimated revenue over actual revenue	27,800.00	222,200.00
		$352,200.00
Surplus charges		
Appropriation expenditures	$260,000.00	
Excess of expenditures over appropriations	46,000.00	
Provision for loss on doubtful accounts	600.00	306,600.00
Balance March 31, 1942		$ 45,600.00

* Indicates red figure.

(d)

City of Glendale
Statement of Changes in Bonded Indebtedness
For the year ending, March 31, 1942

Serial bonds		
Balance March 31, 1941	$111,000.00	
Bonds issued	150,000.00	
	$261,000.00	
Less bonds retired	11,000.00	
Balance March 31, 1942		$250,000.00
Sinking-fund bonds		
Balance March 31, 1941 and March 31, 1942 (No issues nor retirements during the year)		95,000.00
Total		$345,000.00

BOOK REVIEWS

The Securities Market and How It Works. Birl E. Shultz. (New York and London: Harper & Brothers Publishers, 1942. Pp. 421. $5.00.)

Dr. Shultz has written a book on techniques and procedures of the New York Stock Exchange which has long been needed by the financial and business community and in courses in security markets. The practical information it conveys on the operations of the New York Stock Exchange provides excellent background and understanding for the student of brokerage accounting. Brokerage accounting gains real meaning for the student if he reads and understands the procedures and techniques described so fully in this new book.

The book divides itself into three natural parts. The first part is concerned with the fundamental information which the student should have by way of background in order to appreciate the details of procedure which follow. It considers the history and function of stock exchanges and the New York Stock Exchange in particular; the history and procedure of listing securities; what securities are, the various types and kinds of securities, and why and how they are brought into being.

The second part has to do with the procedure of trading stocks and bonds on the Floor of the Exchange, and a consideration of some of the current problems of the Exchange. It includes a study of the various kinds of orders and the way each is handled; the geography of the trading floor; the mechanics of executing orders the specialist system; odd-lot price determination; bond trading and the figuring of accrued interest, including taxes (if any), commissions, and amounts paid or received on the purchase and sale of bonds.

The third part covers the procedure in the office previous to and following the execution of orders on the Exchange. It includes a discussion of short selling and collateral loans: the opening and handling of accounts and the responsibilities of the customers' broker; the tracing of orders through the various departments of the brokerage office and the function of each department including a detailed discussion of the preparation of customers' monthly statements by the bookkeeping department, the operations of the margin department, and the clearing, delivering and paying for securities through the Stock Clearing Corporation. Next follows a discussion of the solvency record of members, the brokers' financial statement, and the protection afforded customers.

The final chapter of the book, "An Introduction to Financial Statement Analysis" is included because statistical departments, partners and salesmen must concentrate on knowing a great deal about securities and current economic conditions. The well known aspects of securities and their analysis are only presented to give the book a comprehensiveness for the novice. This is true of some other chapters of the book, such as Chapter IV, "Elements of Corporation Finance." The real contribution of the book however, for the student of finance and accounting is to be found in the clear explanations of the operations of the New York Stock Exchange, and not in these other background-building chapters.

That the volume is authentic and practical is evidenced by the fact that, before being made more complete and advanced in nature, it was first used in mimeograph form as a text for employees of the Stock Exchange. Dr. Shultz was former Director of the New York Stock Exchange Institute. In writing the various chapters he had the assistance of members of the Institute staff, members of the Stock Exchange itself, an investment counsel firm and a firm of public accountants. Frederick S. Todman, C.P.A. was responsible under the editorial direction of Dr. Shultz, for Chapter XX "Customer Protection."

An interesting feature of the book are the large pictures explaining the mechanics of trading on the New York Stock Exchange. One such picture is a photograph of the trading floor of the Exchange with the important spots marked on the picture and explained in detail on the margin. In many ways this is more enlightening than a trip through the Exchange itself.

Although "The Securities Market and How It Works" does not pretend to essay any extended investigation into the broader economic and social aspects of the security markets it does provide an excellent authentic and detailed exposition of the techniques and procedures of the Exchange. It should prove very popular as a text in college courses dealing with the security markets and as required reading in courses in brokerage accounting.

Walter A. Foy

Chicago, Illinois

Corporate Executives' Compensation. George T. Washington. (New York: Ronald Press Company, 1942. Pp. xii, 519. $7.00.)

The purpose of this book is to study against the background of corporation law, the system of managerial rewards that has grown up in the United States during the last thirty or forty years.

The author starts out by discussing problems of executive compensation. He makes the subject timely by saying that in a war-torn world, the nation's economic effort becomes increasingly vast in scale, and more relentless in its demands upon the individual. This makes the task of the corporate manager more difficult and more responsible each day. He suggests that the directors and controlling stockholders, faced with the necessity of providing rewards sufficient to obtain capable management, must seek a plan of compensation which will reconcile the executive's demands with those of the other groups interested in the enterprise. You might say that the development of this theme gives the author his *raison d'état* and emphasizes the importance of his contribution. Professor Washington goes on to point out that a solution to these issues brings

to light new forms of managerial compensation. Among the different forms, the author discusses the following: 1) Profit-sharing either on an individual basis or through a general fund, 2) stock bonuses, 3) stock options, 4) pensions including the purchase of life insurance and annuities, 5) deferred compensation and tax reimbursement plans, 6) indemnity against litigation expenses in stockholders' suits, and against certain liabilities under federal legislation.

He makes no attempt to suggest ready-made plans of compensation because the needs of individual enterprises are too various. It is the author's intention to give, in as simple and direct a fashion as the subject matter permits, a short treatment of the chief legal and practical problems encountered in the drafting and adoption of plans for managerial compensation. This material should be a valuable contribution as a starting point for directors, corporate managers and their advisers in considering the needs of a particular company. It should also prove to be a worthwhile volume for investors, accountants, government officials and others interested in the problems of modern business.

He divides the works into three parts. Tne first section, which includes eleven chapters, is devoted to a discussion of the compensation contract. In an interesting and engaging style Professor Washington covers such a formidable array of topics as the problems of executive compensation, the executive's salary contract, various aspects of profit-sharing including the accountant's role in computation, stock bonus plans, stock options, deferred compensation and tax-reimbursement plans, executive pensions and annuities, compensation contracts and the Federal securities legislation, and the technique of adopting a contract.

In the second part of the volume, four chapters are devoted to legal controls over the size of amounts paid to the executives. This heading is broken down into governmental controls over compensation, judicial controls over executive compensation subdivided into the large and small company, and the ideal of reasonableness. In this section he resists very well the temptation to become too technical on the legal side. In fact he should be given considerable credit for minimizing the amount of legal verbiage and for expressing himself in a simple and readable style in the discussion of so complex a legal problem.

The third part, including the last five chapters, is devoted to problems of indemnity and reimbursement. This includes an illuminating discussion of risk distribution in stockholders' suits and the difficult questions of the corporation defending its managers and whether the directors should be reimbursed. This involves a detailed discussion of the civil liabilities of executives under state and federal law as well as numerous problems in connection with stockholders' suits. In reading this section one cannot but develop admiration for the author's wide reading and dialectical skill.

In the appendix are included various enlightening corporate documents illustrating profit-sharing plans, profit-sharing-computation clauses, inflation clauses, management-stockholding trusts, stock-option contracts, deferred-compensation plans, and indemnity agreements.

On the whole, the material shows the result of careful selection and the chapters are well organized and logically arranged with a good sense of balance and proportion. The subheadings and analytical table of contents make the material more useful and available.

Of particular interest to accountants and tax specialists are the author's clear and intelligent discussion and analysis of the tax problem. It is weaved into the consideration of almost every topic throughout the volume. He brings out particularly the importance of taxation in the choice of compensation plan because many of the complicated arrangements described had their beginnings in a desire to minimize taxes revolving around the questions of the deductibility of the employer's payment and the executive's tax.

The fact that the author makes no attempt to pass judgment on the amounts of remuneration received by particular individuals or paid by certain corporations and does not advocate any particular plan of compensation as being of universal desirability or usefulness makes the writing at times lack punch and distinction.

Professor Washington has supplied this work with footnotes in abundance for purposes of both supplementary context and documentation. There are approximately 1,382 footnotes and there are citations from and references to about 744 cases, but the data is arranged in such a way as to keep it below the burdensome level. The whole treatise is characterized by careful legal research which gives it a certain amount of originality.

This volume should go a long way in acquainting the reader with most of the salient legal points and business aspects of salary and bonus plans, stock options, pensions, indemnity agreements, and related matters. It is a substantial contribution and a welcome addition to the meagre literature on these subjects. One is inclined to agree with the author when he states: "Difficulties under the tax laws and the statutes regulating business will not disappear or diminish. . . . The problem of equitable division of the earnings of business between executives and investors will not soon be solved. It may in fact be accentuated by the strict controls and high tax rates of a war economy."

L. Thomas Flatley
Mundelein College

The Stock Market. Charles Amos Dice and Wilford John Eiteman. (New York: McGraw-Hill Book Company, Inc., 1941. Pp. xv, 486. $4.00.)

This book is a distinct improvement over the first edition which was published in 1926. New material has been added and much of text has been well rewritten.

After presenting a brief defense of security trading and citing a rather wide lack of knowledge on the part of the general public on the usual transactions of the security markets, the authors state as their purpose in presenting the second edition, namely, "to offer speculators, investors, students of the market, and the public itself a factual description of the organization and operation of the security markets, to relate the history of these markets, and to create if possible a greater appreciation of the essential functions that they perform for society."

The authors may have well added that this book can be used to advantage as a reference text, by accountants, teachers of accounting, and students of accounting. All three groups have too little knowledge of security transactions and the institutions that regulate and facilitate security transfers.

One of the most valuable parts of this book, as far as accountants are concerned, is the "stock market terminology," of almost twenty pages, presented in the appendix. This glossary gives a list of definitions of many security terms that accountants hear often but of which they usually know little. This part of the text alone will interest accountants and students of accounting.

Students and teachers of business and accounting also will appreciate reading such chapters as "Reading the Financial Page," "The Classes of Brokers," "The Short Sale" and "Rights and their Market"; while students, of business statistics and the business cycle, will find easily readable information in "Forecasting the Major Trends."

Your reviewer would classify this book primarily as a popularized reference text. Many technical procedures and terms are fully explained and illustrated, in the light of recent changes that have affected stock and bond market transactions.

Of course business men always welcome a handy reference book. Especially corporation executives, who are authorized to decide on types of investment to be made, or on types of securities to be issued, consult the publications of one or more of the well known statistical forecasters of the cycle movements. This book gives a clear description of each of these services, and points out basic differences of theory in thir procedures. The authors do not attempt to criticize the different barometers, but rather to explain each type and show how it is used.

Accountants will be especially interested in reading Chapter XII on "Manipulation and the Securities Exchange Act." Not only is manipulation defined and illustrated, but what is more conditions that have favored manipulation are also described and the ruthless methods of manipulators revealed.

Finally practicing accountants are constantly in need of knowing how best to analyze securities, especially when they are asked to advise their clients on "what stocks to buy" whether "net earning power is to be made the basis of stock values," or "how to analyze and interpret corporation reports" and" how to value the capital structure." The authors have given generous treatment of many such questions.

Your reviewer has only one criticism and that is, the text is, in places, rather too much extended on elementary materials. However a reader can easily pass over the elaborated discussions and pass on to other parts that are less familiar to him.

The text is not only well written, it is also effectively published. The publishers are to be given much credit for efficient editing and well styled typographical technique, all of which adds effectiveness to the presentation of ideas by the authors.

Edwin L. Theiss

University of Illinois

The Control and Valuation of Inventories. National Association of Cost Accountants. (New York: 1941, pp. viii, 408. $3.00.)

This volume, dealing with questions of inventory control and valuation, consists of a collection of articles previously published in the *Bulletins* and *Yearbooks* of the National Association of Cost Accountants, with the addition of several hitherto unpublished papers. The principal service of the book is to assemble in convenient form articles dealing with various inventory problems. In general the book does not break new ground or further refine the present thinking about inventory matters, but rather, provides a useful collection of the more significant inventory papers that have appeared at various times in N.A.C.A. publications. The foreword indicates that the objective of the book is to present a "comprehensive and practical treatment" of inventory problems. The material presented is not always sufficiently "comprehensive" (as will be indicated later), but it is highly "practical" in the sense that much of the material is descriptive of inventory practices followed by particular companies.

The book is divided into four parts. The first deals with the problems of internal planning and control of inventories. The second discusses various questions of inventory valuation. The third describes several rather comprehensive procedures for the planning and taking of a physical inventory. The last part reports the results of two questionnaires dealing with inventory practices followed in accounting for raw materials and finished goods. Since each section is somewhat discrete the book may be best reviewed by considering each part separately.

PART I—INVENTORY CONTROL

This section is devoted to a discussion of the advantages of a thorough system of inventory planning and control and of the problems involved in installing and operating such a system. In addition to several articles emphasizing general principles or procedures that should ordinarily be observed in the establishment of satisfactory internal control over inventories, there is considerable attention given to the internal control methods adopted by particular companies. Inventory control systems are described for the following types of companies:

Corset manufacturer	pp.	57–59
Manufacturer of electrical products		72–92
Chain of confectionery stores		93–99
Manufacturer of cutlery		100–104
Manufacturer of rubber tires and tubes		105–110
Manufacturer of shirts		121–138

In the aggregate the articles in this section provide an excellent survey of the more important aspects of the question of inventory control.

PART II—INVENTORY VALUATION

This section presents a dual approach to the question of inventory valuation. Some of the articles discuss the question of inventory valuation primarily in terms of theoretical considerations. Other articles are confined to a description of the valuation practices em-

ployed in a particular company. Occasionally both approaches are combined in a single paper.

Nearly all of the discussion of the theoretical aspects of inventory valuation is concerned with the "lower of cost or market" as a basis of valuation or with "last-in, first-out" and the "base stock" methods of determining "cost." In general, these articles appear to have been written by persons holding virtually identical views. The advocates of the "lower of cost or market" basis of inventory valuation rather fully develop their views as to the propriety of this device. Also considerable space is devoted to the advocacy of "last-in, first-out" and the "base stock" methods of determining the "cost" of the inventory. No articles are included, however, that are critical of these devices. It may well be that the N.A.C.A. has not published any papers that take an opposing point of view and so could include none here, but if this be so, the expressed intention of providing a "comprehensive" treatment of inventories might well be modified.

Overlooking this limitation on the scope of the discussion, the papers in this section do combine to express rather well the philosophy of those who favor the use of the "lower of cost or market," "last-in, first-out" and the "base stock" method. They do not succeed in resolving the basic conflicts that have existed in the field of inventory valuation—nor is it to be expected that they would do so, since they are, in the main, reprinted articles. They do, however, present rather fully a point of view that is shared by a greater part of the accounting profession. The particular papers that are noteworthy in this respect are the papers of Kracke (p. 165) Broad (p. 184) and Graham (p. 254).

The remaining papers in this section offer considerable variety. One article describes the valuation procedures followed in the standard cost system of a concern engaged in the manufacture of rubber tires and tubes (p. 228). Also there is an article which discusses the disposition of variances from standard costs and presents an unusual calculation of variances involving an extreme reliance on replacement costs for purposes of segregating inventory losses or gains due to price fluctuation (p. 296). There is also a quotation from the income tax regulations of the Treasury Department (Regulation 103) describing the terms and conditions on which "last-in, first-out" may be used as a method of determining the cost of inventory for tax purposes.

Another noteworthy feature of this section is the inclusion of several papers describing the application of the "lower of cost or market" method of valuation. These papers serve to emphasize the variety of interpretations that may be given to the terms "cost" and "market" in the application of this basis of valuation (pp. 195–227).

PART III—INVENTORY TAKING

The three articles in this section are similar in that each is descriptive of the practices or procedures that should be observed in the planning and taking of a physical inventory. They differ, however, in the degree of generality with which inventory-taking problems are discussed. The first article is quite general in its delineation of principles or practices to be observed. The second article also deals in generalities, but in addition includes a discussion of the inventory-taking problems found in particular industries, viz.: soap manufacturing, tanning, shoe manufacturing, cotton textiles, and department stores. The third article reproduces a set of instructions that were actually employed in directing the process of inventory taking in an industrial plant.

PART IV—INVENTORY PRACTICE

This section reports the results of two questionnaire studies of inventory practices. One questionnaire dealt with practices followed in accounting for raw materials and the other dealt with the practices followed in accounting for finished goods. The samples involved were not too small to possess some dependability. One hundred ninety-seven replies were received form one questionnaire and 325 replies from the other. The questionnaire did not produce results that were highly unexpected. In general they tend to corroborate subjective impressions as to the prevalence of various practices. Nevertheless, they provide some very interesting summaries that may furnish useful evidence in any study of specific inventory practices.

E. B. Rickard

Philadelphia, Pa.

ASSOCIATION NOTES

R. L. Dixon

SECRETARY'S OFFICE

The mailing address for all items coming to the attention of the Secretary is now School of Business Administration, University of Michigan, Ann Arbor, Michigan. All matters involving membership dues, new members, student associate memberships, ACCOUNTNG REVIEW *subscriptions, monograph orders, and similar items should be addressed as indicated.*

NEW MEMBERS

The following have become members of the Association to date during the current year:

NAME	PROFESSIONAL CONNECTION	NOMINATED BY
G. T. Altman		R. L. Dixon
A. S. Aronson	National Dairy Products Corp.	T. Lang
P. E. Benner	Pennsylvania State College	C. J. Rowland
A. L. Bernd	RCA Manufacturing Company, Inc.	G. Carmichael
C. W. Beshus	Lowe and Beshus	J. C. Lewis
W. V. Blackie	Caterpiller Tractor Company	R. L. Dixon
M. Block	Anchin, Block & Anchin	T. Lang
J. F. Bradley	Pennsylvania State College	C. J. Rowland
S. C. Brumfield	U. S. Naval Reserve	H. D. Kerrigan
Fr. J. A. Butt	Loyola University	J. C. Van Kirk
V. H. Carmichael	Ball State Teachers College	G. Carmichael
C. N. Carter	Carter, Baily, Kirlin & Walker	G. Carmichael
P. J. Creagh	Streeter-Amet Company	H. D. Kerrigan
E. R. Dahlquist	Private practice	H. D. Kerrigan
H. M. Daniels		R. L. Dixon
M. S. Cole	U. S. Treasury	C. A. Phillips
S. W. Eskew	Cotton & Eskew	T. W. Leland
C. W. Fackler	New York University	H. H. Bailey
F. Fitzgerald	Private practice	S. G. Winter
H. N. Fitzhugh	Howard University	R. L. Dixon
C. F. Ford	Ernst & Ernst	G. Carmichael
L. A. Gibb	Monmouth College	R. L. Dixon
T. F. Gorman	Manhattan College	H. M. Ryan
K. T. Hart	Spring Hill College	L. Glover
E. Henke	Evansville College	G. Carmichael
J. A. Higgins	International Business Machines	J. H. Keys
M. M. Hirn	De Paul University	C. G. Melvoin
R. H. Hervig	La Sierra College	R. L. Dixon
J. R. Hock	Price Waterhouse & Co.	H. D. Kerrigan
H. Janssen	Yankton College	C. J. Rowland
J. B. Janvrin	Barrow, Wade, Guthrie & Co.	C. Talbot
M. Jensen	Central Service Association	L. H. Allen
V. Johnson	Arthur Andersen & Co.	R. L. Dixon
G. G. Jones	U. S. Treasury	C. A. Phillips
J. J. Karg	Federal Power Commission	A. R. Safeblade
M. Kaufman	Securities & Exchange Commission	F. R. Byrne
W. M. Layman	M. S. Kuhns & Company	H. D. Kerrigan
C. F. Leonard	Humble Oil & Refining Co.	G. Carroll
G. Lodwig	Briggs Manufacturing Co.	R. L. Dixon
C. H. Martin	University of Newark	T. L. Martin
L. K. Mayer	Columbia Machine Works	R. L. Dixon

F. H. Maier		R. L. Dixon
T. W. Massoth	RCA Manufacturing Co., Inc.	G. Carmichael
L. H. Meyer	War Department	R. Cashdon
J. K. Miller	Ernst & Ernst	R. L. Dixon
R. Miller	Humphrey, Robinson & Co.	T. W. Leland
E. C. Mott	U. S. Treasury	C. A. Phillips
A. O'Reilly	Arthur Young & Co.	T. W. Leland
W. J. Parvelec	RCA Manufacturing Co., Inc.	G. Carmichael
D. B. Peter	Remington Arms Co., Inc.	G. G. Fullerton
S. M. Politi	Escola Livre de Sociologia e Politica	R. L. Dixon
C. C. Rafferty	Bank	G. G. Fullerton
H. M. Read	Basca Manufacturing Co., Inc.	G. Carmichael
P. E. Remington	Mountain States Tel. & Tel. Co.	G. G. Fullerton
J. H. Rigby	Office of Price Administration	P. M. Green
J. F. Schoen	U. S. Treasury	C. A. Phillips
P. K. Seidman	Seidman & Seidman	R. B. Kester
R. A. Sherman	Sparrow, Waymouth & Co.	E. W. Lightfoot
D. Shew	Private practice	N. P. Bogorodsky
R. M. Swisher	Rhae M. Swisher & Co.	H. D. Kerrigan
D. W. Thompson	Butler University	G. Carmichael
G. H. Triplett	Loyola College	J. A. Jenks
H. C. Walling	U. S. Bureau of Budget	B. W. Ruffner
B. M. Wean	Central Normal College	G. Carmichael
C. Wintersea	General Electric Co.	R. L. Dixon
D. B. Young	Bucknell University	C. E. Burgee
C. R. Young	Brooklyn College	D. Lipsky

PERSONAL NOTES

Willard N. Anderson (Valparaiso University) received an Arizona certificate in January.

John T. Begley (Creighton University) has been appointed Secretary-Treasurer of the Nebraska State Board of Examiners.

Daniel Borth, Jr. (Louisiana State University), Vice-President of the American Accounting Association, now holds the rank of Major in the Quartermaster's Corps.

R. L. Boyd (University of Illinois) recently passed the examinations required for the public accountant's license in Illinois.

Victor Z. Brink (Columbia University) is on active duty as Captain in the Infantry, assigned to Fiscal Division, Service of Supply, Washington, D. C.

J. Maxwell Cadwallader (Fresno State College) has received a commission as Lieutenant Junior Grade in the Ordnance Division of the U. S. Navy.

Walker Campbell (University of Pennsylvania) is in Washington working with the Office of Price Administration.

William F. Crum (University of Wichita) entered the army at Ft. Leavenworth, Kansas, in June.

M. B. Dilley (Drake University) spent the past year as visiting professor of accounting at Oklahoma A. & M.

James L. Dohr (Columbia University) during the coming year will be on leave from the University to serve as Director of Research with the American Institute of Accountants.

Taylor A. Duncan (Boston University) has been commissoned Lieutenant Commander in the U. S. N. R. Cost Inspection Department.

Robert W. Elsasser (Tulane University) is on leave of absence to act as Vice-President and Personnel Director of the Pendleton Shipyards Co., Inc., of New Orleans.

S. Paul Gazner (University of Alabama) has accepted appointment with the Office of Price Administration as Accountant for the state of Alabama.

Henry Rand Hatfield delivered two lectures (on surplus and dividends) at the Graduate School of Business Administration, Harvard University, April 21 and 23 under the auspices of the Dickinson Foundation.

Joseph Hunt (St. Joseph's College) has been granted a leave of absence to serve as Senior Business Economist with the Office of Price Administration in Washington.

J. Hugh Jackson (Stanford Graduate School of Business) is author of a new introductory-accounting text, *Accounting Principles*, Charles R. Hadley Company. He is serving this year as Governor of the California-Nevada District of Kiwanis International.

Arthur C. Kelley (San Jose State College) has taken the position of Supervising Cost Accountant and Auditor in the Office of Cost Inspector, U. S. Navy, Eleventh Naval District. He is on leave of absence from his college.

Louis M. Kessler (University of Illinois) is on leave, serving as accountant and statistician in the Office of Price Administration.

Jeremiah Lockwood (University of Pennsylvania) has recently been appointed Chairman of the Accounting Department of the Wharton School.

Arthur N. Lorig (University of Washington) is teaching at the University of Texas during the summer session.

George A. MacFarland (University of Pennsylvania) has been made chairman of the Advisory Committee on Contacts and Placements of the Wharton School.

R. K. Mautz (University of Illinois) completed his work for the Ph.D in accountancy in May and begins work with Haskins & Sells, Chicago office on July 1.

Lloyd Morey and O. W. Diehl (University of Illinois) are co-authors of *Municipal Accounting*, John Wiley & Sons, recently published. *Professor Morey* also is a member of the Committee for Manual on University and College Business Organization and Administration, representing the American Council on Education.

Cecil A. Moyer (University of Illinois) passed the November, 1941 C.P.A. examination in Illinois.

H. L. Newcomer (University of Illinois) is on leave to work with the War Production Board in Washington.

Charles H. Schmidt (University of Pennsylvania) has joined the Bureau of Economic Research in New York City.

H. T. Scovill (University of Illinois) is serving as Acting Dean of the College of Commerce during the absence of *Ddan Thompson* who is acting as Chairman of the Committee on Adjustment of Business to War Conditions. *Professor Scovill* was recently elected Secretary-Treasurer of the National Conference of State University Schools of Business.

Victor E. Storli (Fresno State College) is now a member of the Board of Directors of the California State Society of Certified Public Accountants, and is also a member of the Committee on Education.

William Howard Taylor (University of Pennsylvania) is now in Washington with the Office of Price Administration.

E. L. Theiss (University of Illinois) has been elected President of the Decatur (Central Illinois) Chapter of the National Association of Cost Accountants. *Professor Bailey* has been elected Secretary.

The *University of Illinois* was host for the annual Down-State meeting of the Illinois Society of C.P.A.'s. Faculty members participating were: R. P. Hackett, A. C. Littleton, H. T. Scovill as speakers, Lloyd Morey as President of the Society, and E. L. Theiss, Chairman of the Committee.

The *Ohio State University* offered its Fifth Annual Institute on Accounting at Columbus on May 15 and 16. The speakers included Herbert F. Taggart, Harry E. Howell, Donald M. Russell, and E. L. Kohler.

Pace Institute high-scholarship students were awarded two $25-cash prizes and seven gold medals by the New York State Society of Certified Public Accountants.

The *University of Pennsylvania* in May acted as host for the annual Accounting Forum, organized by the Pennsylvania Chapter of the American Institute of Accountants.

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